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Oil and Gas Resources of Australia 2004

Geoscience Australia

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Glossary

°API	Degrees American Petroleum Institute—a measure of oil density.
	$\text{API gravity} = \frac{141.5^\circ}{\text{specific gravity at } 60^\circ \text{ F}} - 131.5^\circ$
Basin	A geological depression filled with sediments. Several basins of different ages overlying each other are referred to as stacked basins (e.g. Cooper/Eromanga Basins).
Completion	The process by which a finished well is either sealed off or prepared for production.
Condensate	A liquid mixture of pentane and heavier hydrocarbons that is recoverable from a gas well through a separation system.
Crude oil	A mixture of hydrocarbons that existed in the liquid phase in natural underground reservoirs and remains liquid at atmospheric pressure after passing through surface separating facilities.
Demonstrated resources	The amount of petroleum that can be recovered from the part of identified resources whose existence is established and whose quantity is considered probable, based on well data and geological projection. In this publication, demonstrated resources are taken to be equal to remaining, proved plus probable, commercial and non-commercial reserves of petroleum as maintained at Geoscience Australia.
Development	Phase of the petroleum industry in which a proven oil or gas field is brought into production by drilling production wells.
Discovery	The first well (in a new field) from which any measurable amount of oil or gas has been recovered. A well that makes a discovery is classified as a new field discovery (NFD).
Exploration	The phase of operations in which a company searches for oil or gas by carrying out detailed geological and geophysical surveys followed up where appropriate by exploratory drilling in the most promising places.
Extension/appraisal wells	Wells drilled to determine the physical extent, reserves and likely production rate of a field.
Gross	Including both permeable and non-permeable intervals.
Identified resources	The total amount of petroleum that can be recovered from specific accumulations that have been identified by drilling.
Initial resources	Resources before subtraction of cumulative production.
LNG	Liquefied natural gas, gaseous at normal temperature and pressures, but held in the liquid state at very low temperatures to facilitate storage and transport.
LPG	Liquefied petroleum gas, a liquid mixture of all the propane and butane that are recoverable from a well through a separating facility.
Natural gas	A mixture of methane and ethane and up to 3% of carbon dioxide.
New-field wildcat well	A petroleum exploration well drilled on a structural or stratigraphic trap that has not previously been shown to contain petroleum.
Petroleum	A naturally occurring hydrocarbon or mixture of hydrocarbons. As oil or gas or gas in solution, it is widespread in Australian sedimentary rocks, but major concentrations are generally rare.

Petroleum resources	The part of Australia’s petroleum endowment that may be produced profitably by currently feasible or near-feasible technology and for specified product prices. Petroleum resources are defined to include only those natural concentrations from which economic extraction of a part is feasible within the range of technology and prices likely to be seen within the next 20 to 25 years. Hence, petroleum resources are a subset of petroleum endowment that can change according to the assumed technological and economic conditions.
Production	The phase of bringing well fluids to the surface and separating them and storing, gauging and otherwise preparing the product for transportation.
Production test	A test on a cased well whereby the nature and quantity of the formation fluids in a possible oil or gas bearing stratum are determined by allowing them to flow to the surface through the drill string under carefully controlled conditions.
Prospective	Likely to contain producible petroleum.
Proved and probable reserves	Reserves established at the median value – that is with a 50% cumulative probability of existence.
Remaining resources	Resources after subtraction of cumulative production from the initial amount of resources.
Repeat formation test	Test run on a wireline in a well, to measure the pressure and temperature of the specific depths and to take small fluid samples from the reservoir.
Risked	Amount multiplied by the probability of existence.
Success rate	A ratio obtained by dividing the number of new-field discoveries by the number of new-field wildcat wells drilled.
Trap	Any barrier to the upward movement of oil or gas, allowing either or both to accumulate.
Undiscovered accumulation	A general term representing all undiscovered petroleum deposits irrespective of economic potential.
Undiscovered field	All of the petroleum accumulations that may occur in multiple reservoirs within the same structural or stratigraphic trap.
Undiscovered resources	The amount of conventional petroleum that can be recovered from unspecified accumulations that have not been identified by drilling, but may exist within a specific reservoir sequence wherever it lies within a structural or stratigraphic trap.

Abbreviations

°API	degrees American Petroleum Institute
Bbbl	billion barrels = 10^9 barrels
bbbl	barrel
BCF	billion cubic feet = 10^9 cubic feet
BCM	billion cubic metres = 10^9 m ³
BOPD	barrels of oil per day
BRS	Bureau of Resource Sciences
Bscf	billions of standard cubic feet
cc	cubic centimetre
cm	centimetre
d	day
DST	drill stem test
EOR	enhanced oil recovery
EUR	estimated ultimate recovery
EXT	extension to previously discovered petroleum field
FPSO	floating production, storage and offloading
ft	feet
GL	gigalitre = 10^6 cubic metres = 6.28981 million barrels
JPDA	Joint Petroleum Development Area
kbbl	thousand barrels
kcm	thousand cubic metres
kL	kilolitre
km	kilometre
km ²	square kilometre
kPa	kilopascals, a unit of pressure
LNG	liquefied natural gas
LPG	liquefied petroleum gas
m	metre
m ³	cubic metre
ML	megalitre = million litres
mm	millimetre
MMbbl	million barrels
mRT	metres below rotary table
na	not applicable
NFD	new-field discovery
NPD	new-pool discovery
PJ	petajoule = 10^{15} joules
ppm	parts per million
psi	pounds per square inch
RFT	repeat formation test
scf	standard cubic feet (cubic feet at standard atmospheric temperature and pressure)
Tcf	trillion cubic feet = 10^{12} cubic feet
TJ	terajoule = 10^{12} joules
y	year
ZOCA	Australia–Indonesia Zone of Cooperation Area A (now JPDA)

Conversion factors (approximate)

1 kilolitre = 6.2898 barrels

1 cubic metre = 1 kilolitre = 35.315 cubic feet

Throughout the text one thousand million (10^9) is referred to as one billion, and one million million (10^{12}) as one trillion.

1 barrel = 0.159 kilolitres

1 cubic foot = 0.0283 cubic metres

Summary

Exploration 2004

A total of 123 exploration wells were drilled in 2004, 27 wells more than in 2003 and 33 more than 2002 (90 wells). Offshore, 27 new field wildcat wells and 16 extension/appraisal wells drilled resulted in 12 new field discoveries, including those discoveries inferred from well logs and repeat formation tests. In 2004 new field discoveries occurred in the:

- Bass Basin at Trefoil (gas);
- Bonaparte Basin at Katandra (oil);
- Carnarvon Basin at Altostratus, Harrison, Monet and Stickle (oil), Boojum and Wheatstone (gas), Gungurru and Eskdale (oil and gas);
- Gippsland Basin at Moby (gas);
- Otway Basin at Martha (gas).

Onshore 80 exploration wells were drilled in 2004, more than double the number in 2003. There were 59 new-field wildcat wells drilled and 21 extension/appraisal wells drilled resulting in 34 new-field discoveries. Most of the success and activity occurred in the Cooper and Eromanga basins of South Australia and Queensland where exploration drilling continued to be driven by new operators into the area. Further oil and gas discoveries occurred in the Perth Basin in Western Australia, the Bowen and Surat basins of Queensland and the onshore Gippsland Basin. A full list of discoveries is given in Appendix C.

In 2004, a total of 24,109 line km of 2D seismic and 8,719 km² of 3D seismic were recorded in Australia. Offshore there were 25 seismic surveys carried out (23 completed) which collected 19,959 line km of 2D data and 7,339 km² of 3D data. Onshore, there were 35 separate seismic surveys carried out which acquired 4,150 line km of 2D data and 1,380 km² of 3D data.

Petroleum exploration expenditure in 2004 was \$921 million of which \$663 million was expended offshore and \$258 million onshore. Expenditure on development and production in 2004 was \$4,918 million of which \$3,694 million was offshore and \$1,223 million onshore.

Timor Sea Joint Petroleum Development Area (JPDA)

On 20 May 2002, the date of Timor-Leste's independence, Australia and Timor-Leste signed the Timor Sea Treaty. This Treaty governs petroleum exploration and development in that part of the Timor Sea subject to overlapping jurisdictional claims.

The Treaty came into force on 2 April 2003 and sets the framework for joint administration by Australia and Timor-Leste of petroleum exploration and development in the Timor Sea. The Treaty sets out matters such as fiscal and

administrative arrangements and importantly gives certainty to investors in the JPDA created by the Treaty.

Part of the Timor Sea is subject to overlapping territorial claims by Australia and Timor-Leste. This area contains extensive resources of oil and gas and two major petroleum development projects are underway or proposed – the Bayu-Undan Field and the Greater Sunrise Field. These fields are of major national interest to Australia, and revenue from them will support Timor-Leste’s future development.

The development of the Bayu-Undan Field has commenced with liquids revenue flowing from early 2004. From 2006, gas from the field will be processed onshore in Darwin, providing employment opportunities and export revenue. Development of the Greater Sunrise Field offers substantial long term benefits for Australia with development and investment decisions to be made at a later stage.

Reserves and resources

Most (610 of 992 GL) of Australia’s initial commercial crude oil reserves have been discovered in offshore Paleogene reservoirs in the Gippsland Basin. Additional major oil reserves have been discovered in the Carnarvon and Bonaparte basins. The most significant gas reserves are located in the Carnarvon, Gippsland, Browse, Bonaparte and Cooper Basins.

Despite the number of discoveries in 2004, there has been an overall decrease in crude oil and gas reserves for identified fields in the year to 1 January 2005. Condensate reserves increased over the same period.

Table S.1 Remaining commercial reserves at 1 January 2005 and estimates of reserves that have not yet been declared commercially viable (non-commercial) reserves

Commercial reserves

Crude oil (GL)	Condensate (GL)	Liquid petroleum gas (GL)	Sales gas (Bcm)
123.6	100.8	117.1	724.7
(million barrels)	(million barrels)	(million barrels)	(Tcf)
714	634	736	26.7

Non-commercial reserves

Crude oil (GL)	Condensate (GL)	Liquid petroleum gas (GL)	Sales gas (Bcm)
124.2	314.9	174.8	3,313.9
(million barrels)	(million barrels)	(million barrels)	(Tcf)
781	1,981	1,100	117.0

Development

In October 2005 Anzon Australia Limited commenced a six month extended production test from the Basker Field using the FPSO vessel, the Crystal Ocean. The test production rates from the Basker 2 appraisal well were approximately 1,431 kL/d (9 kbbbl/d). The production rates are expected to rise to about 3,178 kL/d (20 kbbbl/d) during peak production when the fields are fully developed in mid-2006.

In June 2005, Esso applied for a Production Licence for the Kipper gas field. Front-end engineering and design is expected to commence in the first half of 2006 while production from the field is expected to commence in 2009.

A production licence (Vic/L24) for Casino development was granted to Santos in April 2005 and development is progressing as scheduled. The development drilling phase, comprised Casino 4 and 5 wells, which were successfully drilled and completed for production. First gas is anticipated from the Casino gas project in the first quarter of 2006.

Government approval for the development of the Thylacine and Geographe gas-condensate fields was granted to Woodside in April 2004. In May 2004 the Joint Venture Partners approved development of both fields. Construction work started in early 2005 and is progressing as scheduled. The production start up is expected around mid 2006.

In early 2005 the first gas production was achieved from the Minerva gas field operated by BHP Billiton. The field is located in the Otway Basin, in VIC/L22 permit, approximately 10 km from Port Campbell in 60 m of water. The field is producing at a rate of 3.82 million m³/d (135 million scf/d) of sales gas, and up to 79.5 kL/d (500 bbl/d) of stabilised condensate.

The Yolla development has been delayed following the identification of a number of defects in the key systems of the project. Defect rectification works are continuing on the project and commissioning of the onshore plant and production from the Yolla field is expected in the first quarter of 2006.

On 23 September 2005 AED Oil Ltd submitted a Preliminary Field Development Plan (PFDP) for the Puffin oil field. The field is located in Exploration Permit AC/P22 in the Vulcan Sub-Basin. The Permit is located approximately 80 km south west of the Jabiru and Challis oil fields and approximately 25 km from the Skua oilfield.

In October 2005 INPEX Browse Ltd briefed the Government on their plans with regard to Ichthys gas and condensate field development. Currently INPEX is evaluating various developmental scenarios, targeting the initiation of commercial production after 2010.

In May 2005, Woodside submitted the final field development plan for the Angel gas field to the Government. The development drilling is planned to begin in 2007, with the platform due to be fully operational by the end of 2008.

Woodside's Enfield oil project is more than 60% complete, with first oil production expected in the fourth quarter of 2006. In April 2005 the FPSO *Nganhurra* was launched from its floating dry dock. Topsides facilities were installed and integrated with the hull during the remainder of 2005. In March 2005 the Transocean operated semi submersible drilling rig *Jack Bates* started work on the drilling of 13 wells that will be needed to develop the Enfield oil discovery. This drilling campaign will take about 12 months to complete.

The Mutineer-Exeter fields commenced production on 29 March 2005. Production rates during the second quarter 2005 averaged 11,447 kL/d (72 kbbbl/d). The fields are located in the northern part of the Dampier Sub-basin of the Carnarvon Basin in Western Australia in water depths ranging from 140 to 160 m. The fields are approximately 150 km north of the Dampier and 40 km north of the Cossack Pioneer FPSO.

In July 2005 ChevronTexaco Australia Pty Ltd announced its decision to move the Greater Gorgon development into the Front End Engineering and Design (FEED) phase. The FEED scope includes the establishment of a two train (10 mtpa) LNG facility and domestic gas plant on Barrow Island.

In June 2005, Mobil Exploration and Producing Australia Pty Ltd submitted to the Government the preliminary field development plan for the Jansz-Io gas field, as a precursor to an application for a Production Licence.

Production from the John Brookes gas field commenced in September 2005, producing at an initial flow rate of approximately 1.69-2.27 million m³/d (60-80 million scf/d). John Brookes is located some 60 km northwest of Varanus Island.

In December 2004 Woodside's "Perseus over Goodwyn" project (PoG) received final investment approval. The project first phase comprises of three subsea wells tied back to the Goodwyn-A platform via a 16 inch diameter pipeline. Current plans also incorporate development of the liquids rich Searipple reservoir by one Searipple subsea well tied back to Goodwyn-A platform via the Perseus subsea pipeline. The PoG project is scheduled for start-up in the first quarter of 2007.

In November 2005 BHP Billiton and Woodside Energy have approved the A\$813.67 million development of Stybarrow oil field. The Stybarrow oil field is located 56 km northwest of Exmouth offshore Western Australia with the Eskdale oil and gas field another 12 km further northwest in the Exmouth Sub-basin of the Southern Carnarvon Basin. Stybarrow will be Australia's deepest-ever oil development.

In December 2005 Woodside provided advance notice to the Government of the WA-28-L Joint Venture's plan for submission of the preliminary Vincent Field Development Plan. Vincent is covered by the Enfield Production Licence (WA-28-L). The Joint Venture final investment decision is expected in March 2006. The current plan for first oil production from the Vincent discovery is in 2008.

The Cliff Head oil field development is in progress and the first production is expected in the first quarter of 2006 at initial production oil rates of 2,544 kL/d to 3,816 kL/d (16 kbbbl/d to 24 kbbbl/d).

Production

Table S.2 Daily petroleum production rates in 2004

Crude oil plus condensate		Gas	
Megalitres/day	86.5	Million cubic metres/day	108.6
Barrels/day	544,000	Billion cubic feet/day	3.8

Estimates by Geoscience Australia of future crude oil plus condensate production suggest production in 2006 between 544,000 bbl/d (86.5 ML/day) and 741,000 bbl/d (117.8 ML/day) with a decline to between 148,000 bbl/d (23.5 ML/day) and 342,000 bbl/d (54.4 ML/day) in 2025.

Sufficiency

Crude oil and condensate remaining economic demonstrated resources at the end of 2004 could sustain production of 34.0 GL per year for 14 years. This average production level was calculated for the period 1995 to 2004. The projected consumption of crude oil and condensate in 2005 could be sustained by remaining economic demonstrated economic resources for 9.8 years.

Shale Oil

Previous editions of the *Oil and Gas Resources of Australia* have included a discussion of Shale Oil. This information is now reported in Geoscience Australia's publication "Australia's Identified Mineral Resources" available online at http://www.ga.gov.au/minerals/exploration/resources_advice/AIMR2005.jsp; see page 61.

1: Exploration 2004

1.1 Exploration drilling, seismic surveys, expenditure and discoveries

In 2004, 123 exploration wells were drilled (96 in 2003, revised). These are shown in Table 1.1.

Table 1.1 Exploration wells drilled in 2004

Onshore	New-field wildcats	59
	Extension/appraisal	21
Offshore	New-field wildcats	27
	Extension/appraisal	16

Total exploration metres drilled in 2004 were 286,144 m (232,658 m in 2003, revised).

Seismic surveys

In 2004, 24,109 line kilometres of 2D seismic data were recorded (28,039 in 2003, revised) and 8,719 square kilometres of 3D data were also acquired (7,905 square kilometres in 2003). Onshore, 4,150 line kilometres of 2D data were collected and 1,380 square kilometres of 3D data were acquired. Offshore, 19,959 line kilometres of 2D data were recorded and 7,339 square kilometres of 3D data were collected. The 2004 level of 2D seismic survey acquisition in Australia is less than that acquired in 2003 and 2002 however there has been an increase of about 10 percent in offshore 3D seismic survey data acquisition over the previous year (see Table 1.2). The 2004 onshore levels, both 2D and 3D have both slightly increased over the two previous years but remain, particularly 2D acquisition, at a low level compared with data acquired over the last ten years. Offshore acquisition, both 2D and 3D is also at low levels compared with that acquired over the last 10 years and 2D is at its lowest acquisition level for over a decade with 3D acquisition not much more than in 2003, itself a low level for many years.

Offshore 23 of 25 surveys undertaken were completed in 2004. This was a decrease from 2003 when 28 surveys were undertaken and a decrease from 2002 when there were 30 surveys conducted. Of the 25 surveys, 7 were 3D and 18 were 2D (two of which were continuing at the end of 2004). A 3D survey in the Duntroon Sub-basin of South Australia continued through to 2005. In 2004, 4 operators acquired survey data (Fugro – one survey, Western Geco – 5 surveys, Multiwave Geophysical – 6 surveys and Veritas – 13 surveys). Most of the offshore seismic survey acquisitions were carried out on the North West Shelf of Australia (Carnarvon, Browse and Bonaparte basins) including the Timor Sea, in the Perth Basin and Bremer Sub-basin of the Bight Basin (Western Australia) and in the Duntroon Sub-basin of the Bight Basin and Otway Basin of South Australia.

Onshore there were 34 separate seismic surveys completed in 2004, a substantial increase from the 12 completed in 2003 and the 28 surveys completed during 2002. Of these 34 seismic surveys, there were 10 3D surveys (plus one continuing at the end of 2004) and 24 2D surveys completed. During 2004 Terrex, Trace and Velseis were the main onshore contractors completing 20, 12 and 2 surveys respectively. Terrex was continuing one survey at the end of 2004. It is worth noting that Terrex Seismic Pty Ltd was formerly Trace Energy Services Pty Ltd.

Several different operating companies acquired data onshore during 2004, with Santos in the Cooper and Surat basins, Beach, Enterprise, Cooper Energy, Great Artesian, Innamincka, Stuart, Victoria Oil and Victoria Petroleum in the Cooper Basin, Mozaic and Origin in the Surat Basin, Eastern Star in the Gunnedah Basin and Darling Basin, NSW Department of Mines in the Darling Basin and Essential Petroleum in the Otway Basin. Seismic survey activity in 2004 is summarised in Appendix B.

Table 1.2 Seismic survey acquisition 2002-2004

Year	Onshore		Offshore		Total	
	2D line km	3D sq km	2D line km	3D sq km	Line km	Square km
2002	3,387	1,237	23,572	6,294	26,959	7,532
2003	3,761	805	24,278	7,100	28,039	7,905
2004	4,150	1,380	19,959	7,339	24,109	8,719

Expenditure

Petroleum exploration expenditure incurred in 2004 was \$921 million of which \$258 million was onshore and \$663 million was offshore. Petroleum development and production expenditure incurred by operators in 2004 was \$1,223 million onshore and \$3,694 million offshore. Exploration, development and production expenditure incurred in the Joint Petroleum Development Area (previously known as Zone of Cooperation Area A (ZOCA)) is included in the above figures. Appendix E summarises petroleum exploration, development and production expenditure in 2004. Note that the Northern Territory administers the Commonwealth Territory of Ashmore and Cartier Islands - for petroleum purposes - under an agency agreement with the Commonwealth.

Offshore drilling 2004

The level of offshore exploration drilling activity in 2004 (43 wells drilled) is below the average level over the last ten years (56 wells) and 15 wells less than the 58 wells drilled in 2003 (Figure 1.2). Offshore drilling in 2004 accounted for 27 new-field wildcat wells and 16 extension/appraisal wells (Appendices A, F and G). Drilling was undertaken in 2004 in the Bonaparte, Browse, Carnarvon, Gippsland, Otway and Perth basins.

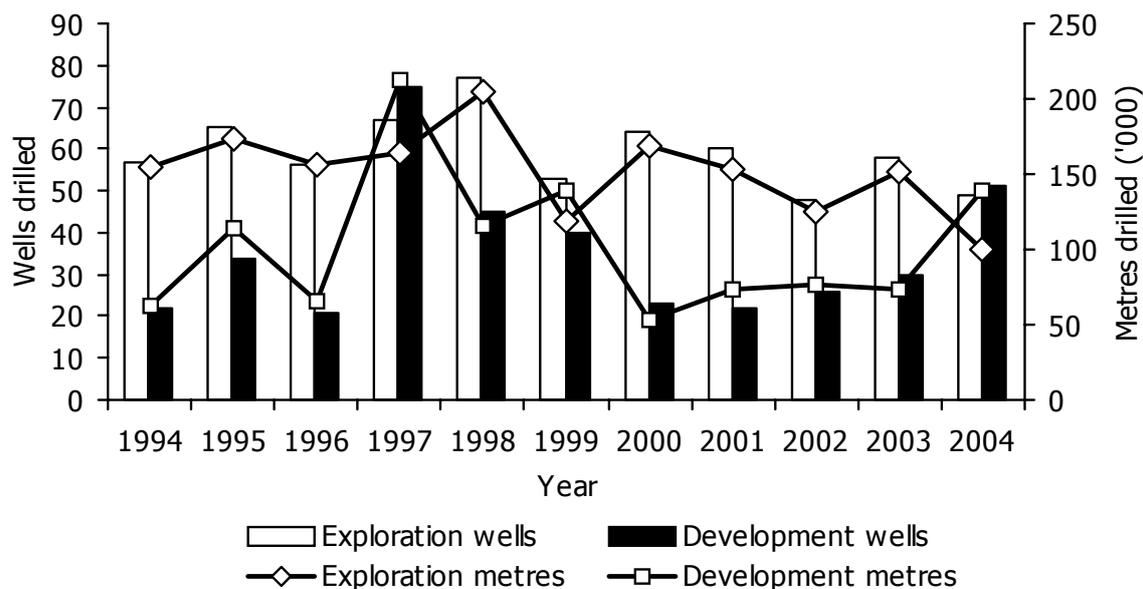


Figure 1.1 Wells and metres drilled offshore 1994-2004

There were 12 offshore new-field wildcat discoveries in 2004 (see Figure 1.2) compared to a record level of 23 in 2000 and 12 in 2001. The 2004 discoveries consisted of 5 oil, 5 gas and 2 oil and gas discoveries and includes those discoveries inferred from well logs and Repeat Formation Testing (RFT). A number of oil and gas finds in the Carnarvon Basin contributed to the upgrading of existing fields but are not considered to be new-field wildcat discoveries. Discoveries occurred in the:

- Bass Basin at Trefoil 1 (gas);
- Bonaparte Basin at Katandra 1A (oil);
- Carnarvon Basin at Altostratus 1, Harrison 1, Monet 1 and Stickle 1 (oil), Boojum 1 and Wheatstone 1 (gas), Gungurru 1 and Eskdale 2 (oil and gas);
- Gippsland Basin at Moby 1 (gas); and
- Otway Basin at Martha 1 (gas).

The offshore discoveries are discussed in more detail in section 2.2 (see Chapter 2).

Onshore drilling 2004

In 2004, 80 onshore petroleum exploration wells were drilled (Figure 1.3). Of these 59 were new-field wildcat wells and 21 were extension/appraisal wells (See Appendices A, F and G). Drilling was undertaken in the following basins: Bowen and Surat (13 wells), Cooper (16 wells), Cooper/Eromanga (28 wells), Eromanga (4 wells), Gippsland (5 wells), Otway (2 wells) and Perth (12 wells).

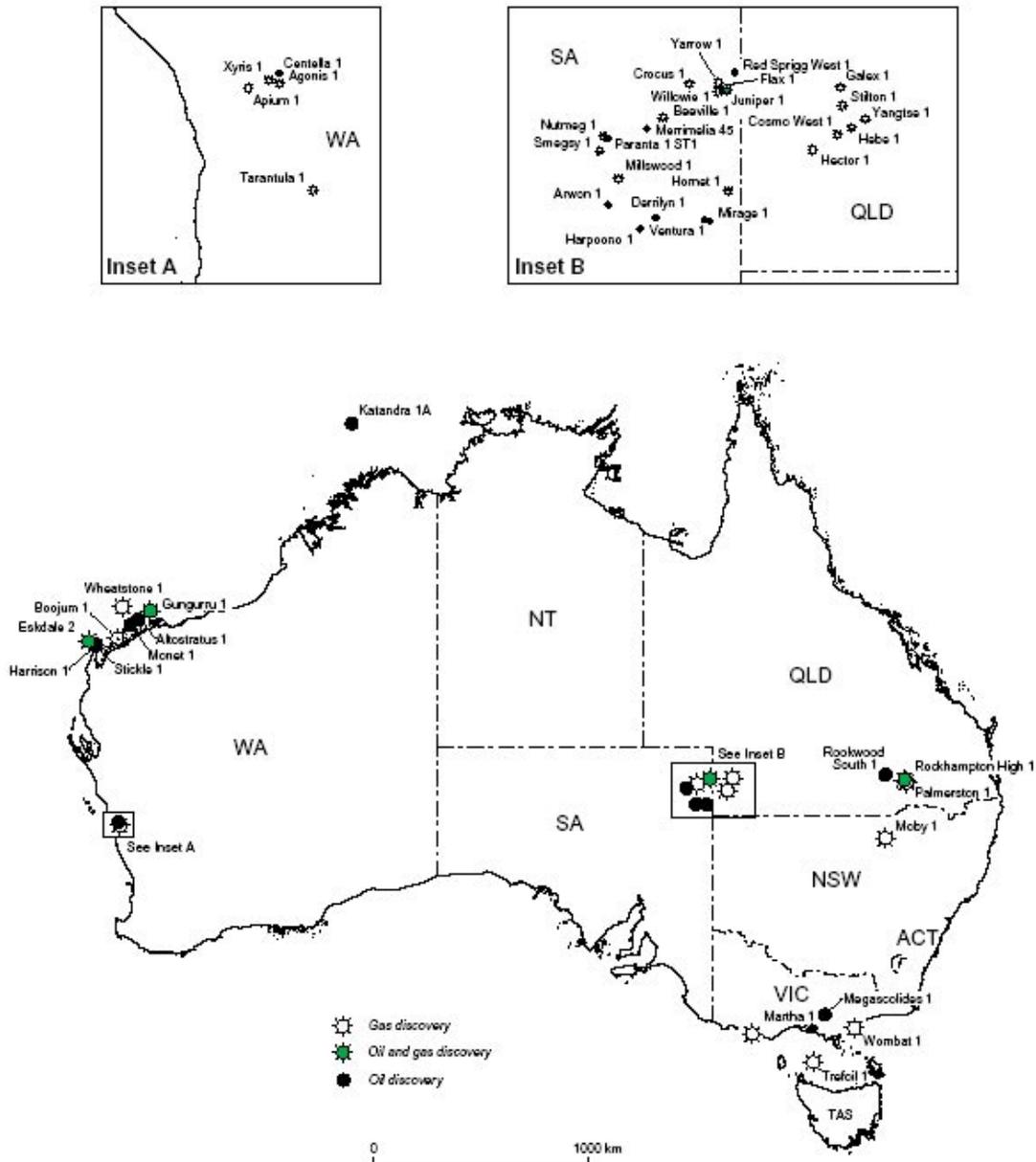


Figure 1.2 Location of discoveries in 2004 (refer to Appendix C)

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Onshore exploration drilling accounted for 34 new discoveries (see Figure 1.2). Most of the success has been in the Cooper and Eromanga basins of South Australia and Queensland and to a lesser extent in the Perth, Surat and Gippsland Basins. A list of discoveries made during the year and other relevant information appears in Appendix C.

Similarly to previous years, exploration drilling in the Cooper and Eromanga Basins continued to be driven by the relinquishing in 1999 of Petroleum Exploration Licences 5 and 6 in South Australia, allowing new operators into the area. The drilling by new operators in the region during 2004 has resulted in 6 new oilfields, 7 gas fields and one oil and gas field being discovered.

In the Gippsland Basin drilling at Megascolides 1 resulted in a new oilfield discovery and at Wombat 1 a new gasfield.

In the Perth Basin, drilling at Agonis 1, Tarantula 1 and Xyris 1 resulted in new gas discoveries, at Centella 1 an oil discovery and at Apium 1 an oil and gas discovery.

The Surat Basin had three discoveries, at Palmerston 1 (gas), Rookwood South 1 (oil) and Rockhampton High 1 (oil and gas).

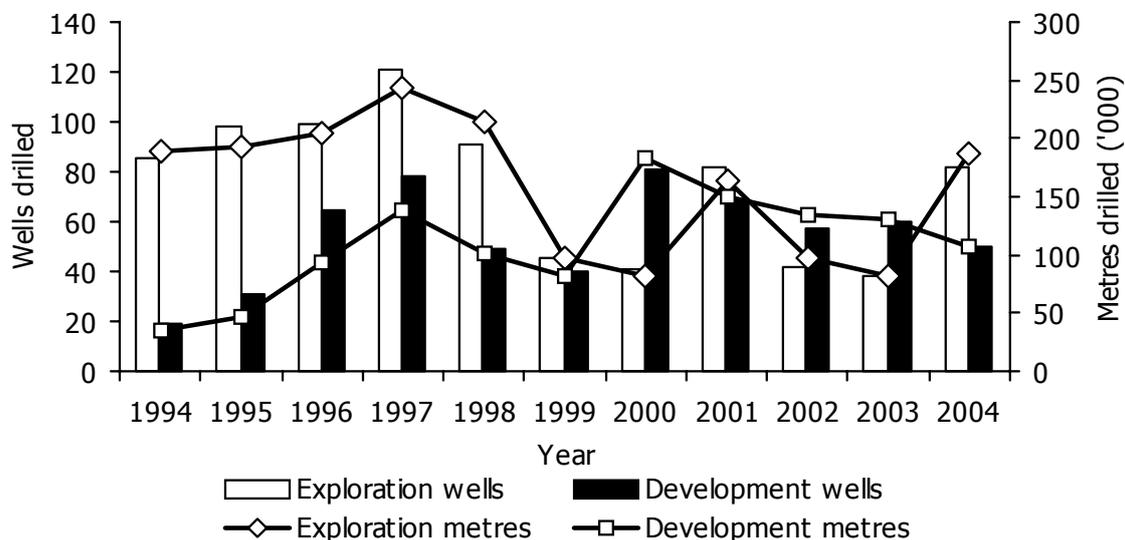


Figure 1.3 Wells and Metres Drilled onshore 1994-2004

1.2 Rig activity 2004

At the end of December 2004 there were 18 active rigs onshore and offshore, one more than at the end of 2003. Nine of the available onshore rigs were active and 9 of the 11 offshore rigs were engaged or in the process of mobilising.

Onshore, the number of active rigs varied throughout the year between 7 and 12. The year commenced with 11 rigs active, predominantly in the Cooper and Eromanga basins and also in the Bowen, Gippsland, Perth and Surat basins. By the end of the year rig activity had risen to 9 rigs active from 7 rigs active mid-year. At the end of the December quarter, the 9 active rigs were engaged in drilling in the Cooper/Eromanga, Surat, Eromanga and Perth basins. During December 2004, 8 onshore rigs remained idle.

Offshore, rig activity varied between 5 and 9 active rigs throughout 2004. The year commenced with 5 rigs working in the Bonaparte, Browse, Carnarvon and Otway basins. In December 2004, 9 rigs were actively undertaking drilling operations in the Bonaparte, Carnarvon, Gippsland, Otway and Perth basins. Two offshore rigs were idle at the end of December 2004.

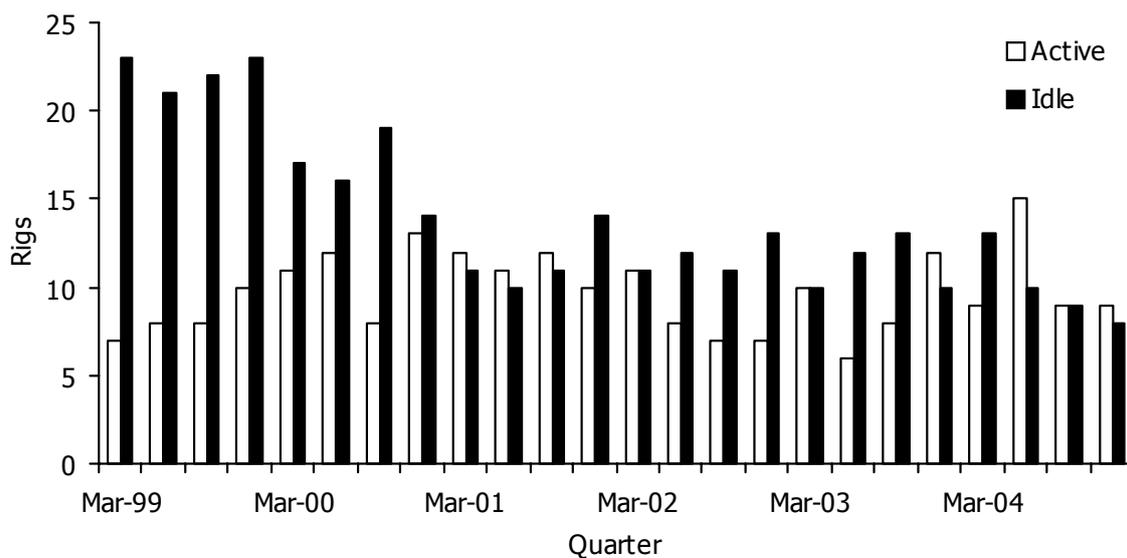


Figure 1.4 Onshore Rig Activity

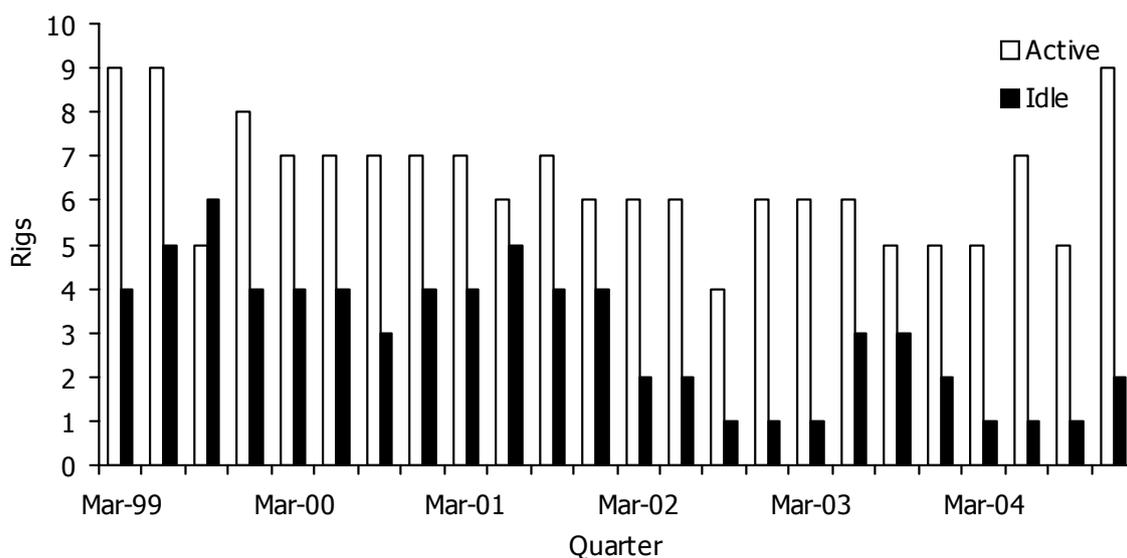


Figure 1.5 Offshore Rig Activity

1.3 Petroleum permits, leases and licences

In 2004, petroleum permits, leases and licences in force or pending renewal both onshore and offshore in Australia covered about 1,485,814 km² (1,511,031 km² in 2003) including the Joint Petroleum Development Area (JPDA). The onshore titles comprised about 874,259 km² (844,162 km² in 2003) and the offshore titles comprised about 611,555 km² (666,869 km² in 2003).

Onshore, exploration permits covered an area of 838,997 km² (804,380 km² in 2003) km², production licences were in force over an area of 34,326 km² (38,826 km² in 2003) and retention leases covered an area of 936 km² (956 km² in 2003).

Offshore, exploration permits covered an area of 578,776 km² (634,800 km² in 2003), production licences were in force over an area of 15,009 km² (13,836 km² in 2003) and retention leases covered an area of 17,770 km² (18,233 km² in 2003).

1.4 Success rates

The success rates shown (Table 1.3) are based on the number of new field wildcat petroleum discoveries and new-field wildcat wells drilled in Australia onshore and offshore for each year from 1989 to 2004. No assumptions have been made as to whether a 'discovery' has proved or will prove to be commercial. Geoscience Australia defines a discovery for success rate purposes as a well from which any measurable amount of oil or gas has been recovered or inferred from well logs. A summary of exploration and development drilling is presented in Appendix A.

Table 1.3 Success rates

Year	Success rate			Percentage success rate		
	Onshore	Offshore	Combined	Onshore	Offshore	Combined
1989	1:2.8	1:2.6	1:2.7	36.4	37.8	37.0
1990	1:2.9	1:4.8	1:3.5	34.9	20.8	28.4
1991	1:2.5	1:7.4	1:3.3	40.3	13.5	30.8
1992	1:3.5	1:4.3	1:3.8	28.3	23.3	26.5
1993	1:2.6	1:3.5	1:2.9	39.1	28.9	34.5
1994	1:1.7	1:3.6	1:2.1	57.6	28.1	47.3
1995	1:2.5	1:4.0	1:2.9	40.7	25.0	34.7
1996	1:2.5	1:2.5	1:2.5	40.3	39.5	40.0
1997	1:1.9	1:3.6	1:2.1	54.0	28.1	47.1
1998	1:2.1	1:4.4	1:2.8	46.6	22.6	35.6
1999	1:2.4	1:3.5	1:3.0	41.4	28.6	33.3
2000	1:2.6	1:2.5	1:2.5	39.1	40.7	40.3
2001	1:1.6	1:3.8	1:2.3	61.7	26.0	43.3
2002	1:1.6	1:2.6	1:2.1	61.9	38.2	47.3
2003	1:2.5	1:3.9	1:3.3	39.3	25.5	30.4
2004	1:1.9	1:2.6	1:2.1	53.3	37.9	48.3

1.5 Release of Offshore Petroleum Exploration Areas

In Commonwealth waters, Australian offshore petroleum exploration acreage is made available to the petroleum industry under a work program bidding system. Offshore areas are released annually by the Commonwealth in two tranches, with closing dates for bids approximately six and twelve months from the date of release. The first closing generally includes mature to sub-mature acreage (relatively well explored) together with other areas requested by stakeholders for early release. Immature to frontier acreage is generally included in the second closing allowing greater lead-times for explorers to develop a pre-bid assessment.

The processes and requirements when applying for and being granted an exploration permit are detailed in three administrative guidelines - Applications for Exploration Areas; Bid Assessment Criteria; Permit Conditions and Administration. These guidelines are published by the Department of Industry, Tourism and Resources (DITR) in the “*Guidance Notes for Applicants*” which accompany the promotional material associated with the annual release of acreage. The guidelines can also be accessed by following the legislation /guideline link at: www.industry.gov.au/petexp (or accessed directly from www.industry.gov.au/petlegislation).

In 1999, the Commonwealth published the *Australian Offshore Petroleum Strategy* document which provided guidance on the size of release areas/exploration permits. This new guide provided a framework for a more focussed approach to offshore petroleum exploration and was applied to the 2000 and subsequent Acreage Release Programs - in mature, relatively well explored sedimentary basins, release areas are generally restricted to a maximum of 8 graticular blocks (approximately 640 km²) in size, while in the less well explored, frontier basins, release areas may comprise up to 80 graticular blocks (approximately 6,400 km²).

The strategy document provided definitions for the exploration maturity of areas. Mature regions have a greater than 50 per cent probability that more than 50 per cent of the total petroleum in the region has been discovered. Sub-mature regions have a greater than 50 per cent probability that 20 to 50 per cent of the total petroleum in the region has been discovered. Immature regions have a greater than 50 per cent probability that less than 20 per cent of the total petroleum in the region has been discovered. Frontier regions are areas where no petroleum has been discovered.

In 1999, the Government implemented an Acreage Re-release Program to allow exploration companies to retain “good standing” in the event of a default in work program conditions in a permit. These arrangements require a defaulting company to spend the agreed value of any outstanding work commitments on new field-work in the minimum guaranteed period of new permits awarded from the Re-release Program. Although the re-release of any area is at the discretion of the Joint Authority, it is generally intended that any area that does not attract a successful bid in the annual Acreage Release Program will be included in the Re-release Program. The re-released areas are open to all bidders under the work program bidding system, with closing dates for bids coinciding with the next closing date under the normal acreage release process.

In early 2004, as part of the 2004/2005 Budget, the Australian Government announced the introduction of a taxation incentive designed to encourage petroleum exploration in Australia’s remote offshore areas. The Government will increase the value of deductible pre-appraisal exploration expenditures incurred in designated offshore frontier areas by 50% for the determination of petroleum resource rent tax (PRRT). This 150% uplift applies to the initial term of the exploration permit awarded over a Designated Frontier Area.

This new incentive to promote exploration of Australia’s frontier, offshore areas applies to the annual offshore acreage releases for 2004 through to 2008. Up to 20% of the areas offered each year under the annual offshore Acreage Release Program

can be designated as frontier acreage eligible for this new taxation incentive, although Designated Frontier Areas must be at least 100 km from an existing commercialised oil discovery and will not be adjacent to an area designated in the previous year's Acreage Release Program.

2004 Offshore Acreage Release Program

In late March 2004, 31 offshore areas were offered to the petroleum industry as part of the 2004 Offshore Acreage Release Program (Table 1.4). Acreage was made available for bidding in 2 tranches, with bids closing on 30 September 2004 (11 areas) and 31 March 2005 (20 areas).

6 of the areas offered in 2004 were Designated Frontier Areas and eligible for the 150% uplift toward PRRT projects for pre-appraisal exploration expenditure (NT04-3, T04-5, W04-2, W04-4, W04-15 and W04-16).

Bids were received for 21 of the 31 areas offered. At time of writing, of the 21 areas that received bids, 15 had been awarded as exploration permits and bids on the remaining 6 areas were under consideration (Table 1.4).

Of the 6 Designated Frontier Areas offered, 3 received bids.

Table 1.4 Results from the 2004 Offshore Acreage Release Program

Release Area	Basin / Sub-basin	Number of Bids	Exploration Permit Awarded	Permittees	Indicative Expenditure (6 Year Program)	6 Year Work Program
W04-1	Bonaparte / Londonderry High	0	None			
W04-2*	Carnarvon / Exmouth Plateau	1	WA-364-P	ChevronTexaco Australia Pty Ltd (Operator); Shell Development (Australia) Pty Ltd.	\$22,100,000	1,011 km ² 2D seismic; 1,011 km ² 3D seismic; One (1) well.
W04-3	Carnarvon / Exmouth Plateau	2	WA-365-P	ChevronTexaco Australia Pty Ltd (Operator); Shell Development (Australia) Pty Ltd.	\$45,250,000	2,511 km ² 3D seismic; Two (2) wells.
W04-4*	Carnarvon / Exmouth Plateau	1	WA-366-P	ChevronTexaco Australia Pty Ltd (Operator); Shell Development (Australia) Pty Ltd.	\$4,000,000	3,010 km ² 2D seismic.
W04-5	Carnarvon / Exmouth Plateau	1	WA-367-P	ChevronTexaco Australia Pty Ltd (Operator); Shell Development (Australia) Pty Ltd.	\$8,350,000	3,011 km ² 2D seismic; 1,000 km ² 3D seismic.
W04-6	Carnarvon / Rankin Platform	1	WA-359-P	Cue Exploration Pty Ltd (Operator); Exoil Ltd.	\$16,450,000	250 km ² 2D seismic; One (1) well.
W04-7	Carnarvon / Rankin Platform	1	WA-361-P	Cue Exploration Pty Ltd (Operator); Gascorp Australia Ltd.	\$16,550,000	250 km ² 2D seismic; One (1) well.
W04-8	Carnarvon / Rankin Platform	1	WA-360-P	Cue Exploration Pty Ltd (Operator); Gascorp Australia Ltd.	\$18,550,000	200 km ² 3D seismic; One (1) well.

W04-9	Carnarvon / Rankin Platform	3	WA-356-P	Apache Northwest Pty Ltd (Operator); Kufpec Australia Pty Ltd.	\$53,180,000	812 km ² 3D seismic; Six (6) wells.
W04-10	Carnarvon / Rankin Platform	0	None			
W04-11	Carnarvon / Barrow	1	WA-355-P	Apache Northwest Pty Ltd.	\$12,290,000	One (1) well.
W04-12	Carnarvon / Barrow	1	WA-354-P	Apache Northwest Pty Ltd (Operator); BHP Billiton Petroleum Pty Ltd.	\$13,000,000	50 km ² 3D seismic; One (1) well.
W04-13	Carnarvon / Barrow	2	WA-358-P	OMV Barrow Pty Ltd (Operator); Nippon Oil Exploration (Australia) Pty Ltd; Tap Oil Ltd.	\$17,100,000	Two (2) wells.
W04-14	Carnarvon / Exmouth	1	WA-357-P	Apache Northwest Pty Ltd.	\$19,150,000	Three (3) wells.
W04-15*	Perth / Houtman	0	None			
W04-16*	Perth / Houtman	0	None			
W04-17	Perth / Vlaming	3	WA-368-P	Nexus Energy Australia NL	\$14,450,000	300 km ² 3D seismic; Two (2) wells.
AC04-1	Bonaparte / Vulcan	0	None			
AC04-2	Bonaparte / Vulcan	1		To be announced		
AC04-3	Browse	1		To be announced		
AC04-4	Browse	1		To be announced		
NT04-1	Northern Bonaparte	0	None			
NT04-2	Northern Bonaparte	3		To be announced		
NT04-3*	Northern Bonaparte	1		To be announced		
V04-1	Otway	1	VIC/P61	Exoil Ltd (Operator); Gascorp Australia Ltd; Otway Oil & Gas Pty Ltd; Southern Energy Pty Ltd.	\$27,800,000	450 km ² 3D seismic; Two (2) wells.
V04-2	Otway / Torquay	1		To be announced		
T04-1	Otway	0	None			
T04-2	Bass / Durroon	1	T/41P	3D Oil Pty Ltd.	\$15,960,000	2,200 km 2D seismic; 200 km ² 3D seismic; One (1) well.
T04-3	Bass / Durroon	0	None			
T04-4	Bass / Durroon	0	None			
T04-5*	Sorell / Port Davey	0	None			

* Designated Frontier Areas eligible for the 150% uplift toward PRRT projects for pre-appraisal exploration expenditure.

2004 Offshore Acreage Re-release Program

10 of the areas offered to industry in the 2004 Offshore Acreage Release Program failed to attract a bid and were re-released in 2 tranches (Table 1.5). The first tranche comprised 2 areas (W04-10 and T04-1). Of these, one area in the offshore Otway Basin (T04-1) received a single bid and was subsequently awarded to Santos Offshore Pty Ltd as exploration permit T/40P.

Table 1.5 Results from the 2004 Offshore Acreage Re-release Program

Re-released Area	Basin / Sub-basin	Number of Bids	Exploration Permit Awarded	Permittees	Indicative Expenditure (6 Year Program)	6 Year Work Program
W04-1	Bonaparte / Londonderry High	Bids closed 20 October 2005				
W04-10	Carnarvon / Rankin Platform	0	None			
W04-15*	Perth / Houtman	Bids closed 20 October 2005				
W04-16*	Perth / Houtman	Bids closed 20 October 2005				
AC04-1	Bonaparte / Vulcan	Bids closed 20 October 2005				
NT04-1	Northern Bonaparte	Bids closed 20 October 2005				
T04-1	Otway	1	T/40P	Santos Offshore Pty Ltd.	\$22,700,000	800 km 2D seismic; 350 km ² 3D seismic; One (1) well.
T04-3	Bass / Durroon	Bids closed 21 October 2005				
T04-4	Bass / Durroon	Bids closed 21 October 2005				
T04-5*	Sorell / Port Davey	Bids closed 21 October 2005				

* Designated Frontier Areas eligible for the 150% uplift toward PRRT projects for pre-appraisal exploration expenditure.

2005 Offshore Acreage Release Program

In April 2005, 29 offshore areas were offered to the petroleum industry as part of the 2005 Offshore Acreage Release Program (Table 1.6). Acreage was made available for bidding in 2 tranches, with bids closing on 20 October 2005 (15 areas) and 20 April 2006 (14 areas).

5 of the offshore areas included in the second tranche (2 in the Browse, 2 in the Bight and 1 in the Otway Basins) are Designated Frontier Areas and eligible for the 150% uplift toward PRRT projects for pre-appraisal exploration expenditure (Table 1.6).

Table 1.6 2005 Offshore Acreage Release Program

Release Area	Basin / Sub-basin	Water Depth Range (metres)	Approximate Size (km ²)	Exploration Maturity
<i>Bids Closed 20 October 2005</i>				
W05-1	Bonaparte / Londonderry High	< 200	2750	Immature
W05-2	Bonaparte / Londonderry High	< 200	2670	Immature
W05-3	Browse / Caswell	200 - 350	1000	Immature
W05-4	Browse / Caswell	< 200	330	Immature
W05-14	Carnarvon / Exmouth Plateau	~ 1200	80	Immature
W05-15	Carnarvon / Exmouth Plateau	1100 - 1200	320	Immature
W05-16	Carnarvon / Exmouth Plateau	800 - 1200	2650	Immature
W05-17	Carnarvon / Barrow	< 200	250	Mature
W05-18	Carnarvon / Barrow	< 200	400	Mature
W05-19	Carnarvon / Exmouth	600 - 2100	4205	Sub-mature
W05-20	Carnarvon / Exmouth	< 200 - 1900	4505	Sub-mature
AC05-1	Bonaparte / Vulcan	< 200	920	Sub-mature
NT05-1	Bonaparte / Darwin Shelf	< 200	9070	Immature
NT05-2	Bonaparte / Darwin Shelf	< 200	8310	Immature
S05-1	Otway	< 200	1915	Immature
<i>Bids Close 20 April 2006</i>				
W05-5*	Browse / Barcoo	300 - 1100	3635	Immature
W05-6*	Browse / Barcoo	< 200 - 500	3455	Immature
W05-7	Browse / Barcoo	< 200 - 300	3710	Immature
W05-8	Browse / Barcoo	< 200	3450	Immature
W05-9	Carnarvon / Exmouth Plateau	1600 - 3000	10470	Immature
W05-10	Carnarvon / Exmouth Plateau	1100 - 1800	4860	Immature
W05-11	Carnarvon / Exmouth Plateau	300 - 1500	4290	Immature
W05-12	Carnarvon / Exmouth Plateau	300 - 1200	3810	Immature
W05-13	Carnarvon / Exmouth Plateau	500 - 1200	3615	Immature
W05-21	Perth / Vlaming	< 200 - 2000	2120	Immature
W05-22	Perth / Vlaming	< 200 - 700	2420	Immature
W05-23*	Bight / Bremer	< 200 - 4000	9415	Frontier
W05-24*	Bight / Bremer	< 200 - 4000	9315	Frontier
S05-2*	Otway	200 - 3000	4270	Immature

* Designated Frontier Areas eligible for the 150% uplift toward PRRT projects for pre-appraisal exploration expenditure.

Take-up of Offshore Acreage and Permitting, 1985 to 2004

Since 1996, an average of 21 offshore exploration permits have been awarded per year from the annual Offshore Acreage Release and Re-release Programs. Take-up rates per year from the programs have averaged around 50% over the same period (Figure 1.6).

Preliminary estimates of award data from the 2004 Offshore Acreage Release and Re-release Programs indicate the take-up rate of vacant acreage for 2004 has exceeded 70%. Acreage take-up in 2004 exceeded take-up in the two preceding years, in terms of both the number of permits awarded and percentage of areas awarded as permits (Figure 1.6).

Between 1996 and 2003, indicative expenditures proposed in work programs for offshore exploration permits awarded from annual Offshore Acreage Release and Re-release Programs show a decline (Figure 1.7).

The large indicative expenditures recorded for 1996, however, are strongly influenced by an aggressive bid (42 wells in the 6 years term of the permit) by Shell Development (Australia) Pty Ltd for exploration permit WA-266-P in the Browse Basin (the “Cornea” permit) and a bid for exploration permit WA-267-P on the Exmouth Plateau in which 6 high-cost, exploration wells were drilled in the minimum guaranteed term of the permit (Geryon-1, Orthrus-1, Urania-1, Maenad-1A, Io-1 and Callirhoe-1). In 1997, a high take-up rate of acreage (76%) and the subsequent award of a relatively large number of permits (26 permits; Figure 1.6) contributed to the high indicative expenditures proposed in bids for acreage offered in the 1997 Acreage Release Program (Figure 1.7).

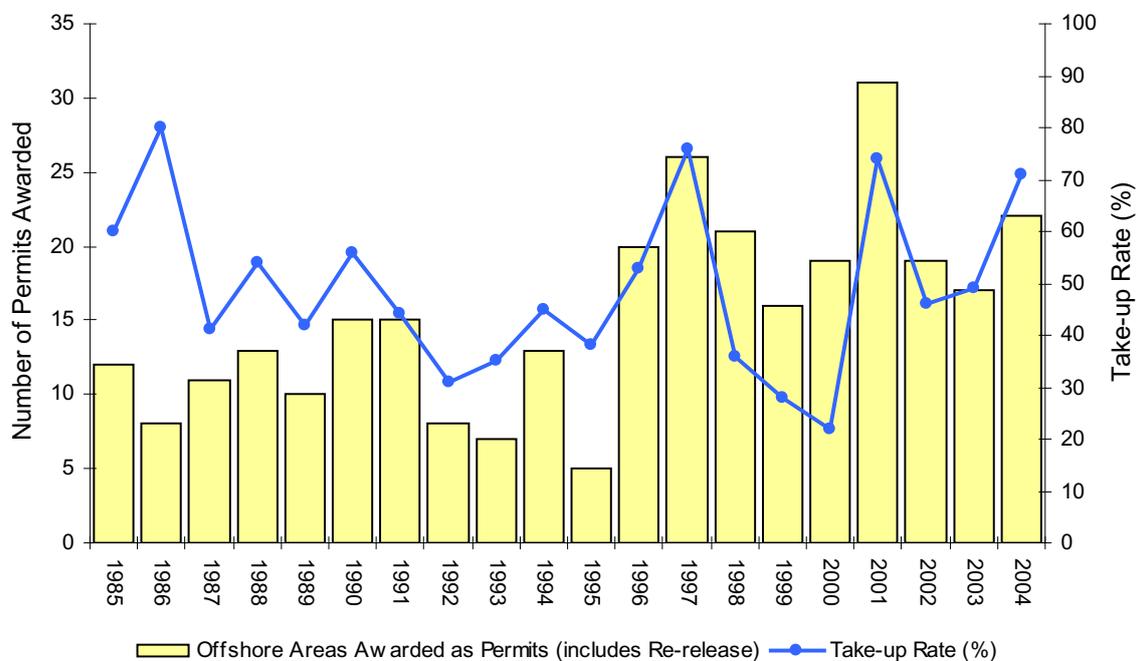


Figure 1.6 Take-up and award of offshore exploration areas from annual Offshore Acreage Release and Re-release Programs

Notes: 1. Excludes data from the JPDA, the former Zone of Cooperation and State Waters.
2. Values for 2004 have been estimated.

Indicative expenditures estimated for 2004 show an increase over the two previous years (Figure 1.7), reflecting both the increased number of permit awards and an improved take-up rate in 2004 (Figure 1.5a). As with the take-up rates and the number of permits awarded in 2004 shown in figure 1.6 the indicative expenditures for 2004 are preliminary estimates only.

Figure 1.8 shows the number of small Australian companies that successfully bid (usually as either joint venture participants with other small Australian companies or larger companies) on areas offered in the annual Offshore Acreage Release and Re-release Programs. With the exception of years 1998 and 1999, since 1996, small Australian companies have become increasingly important participants in the annual Offshore Acreage Release and Re-release programs (Figures 1.8). Although the reason for the low participation rate of small Australian explorers in the 1998 and 1999 acreage release rounds is unclear, the relatively large number of frontier and/or deepwater areas offered in 1998 and 1999 may have limited the number of bids by small companies for offshore areas in these years.

As at May 2005, nearly 60% of companies holding equity (either as operator or joint venture partner) in offshore exploration permits are Australian exploration companies with a market capitalisation of less than \$250 million (Figure 1.9).

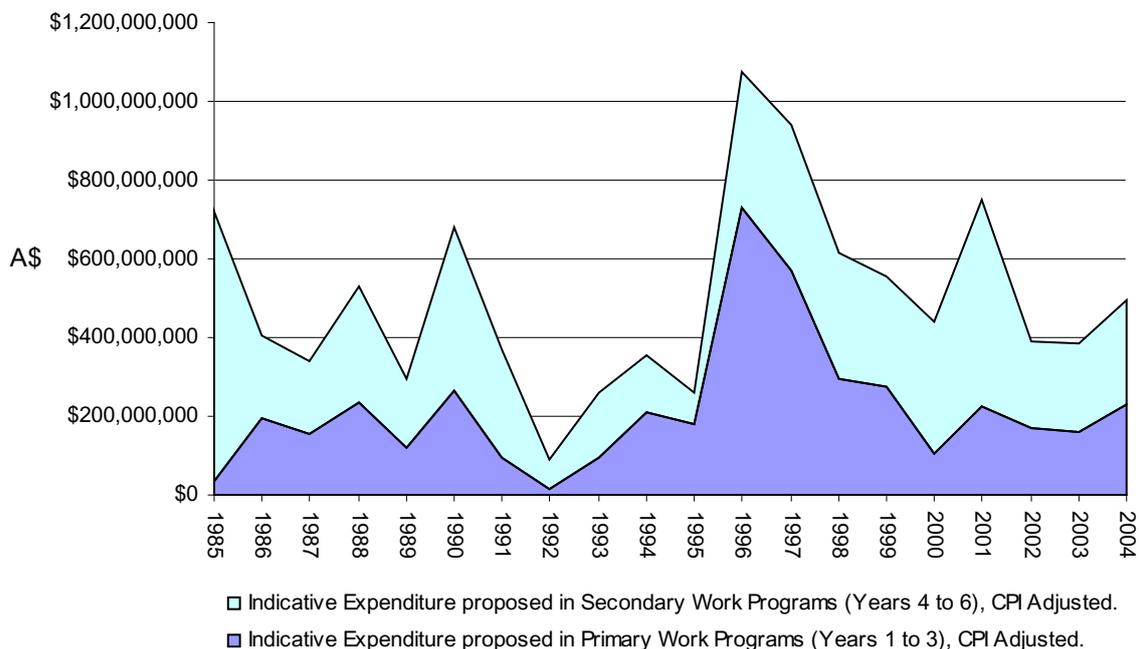


Figure 1.7 Indicative expenditures proposed in offshore exploration permits awarded from annual Offshore Acreage Release and Re-release Programs between 1985 and 2004

- Notes:
1. Excludes data from the JPDA, the former Zone of Cooperation and State Waters.
 2. Years 1985, 1990, 1991 & 1992 included Cash Bid permits.
 3. All indicative expenditures are CPI adjusted to 2004 dollars.
 4. Expenditures for 2004 are estimates.

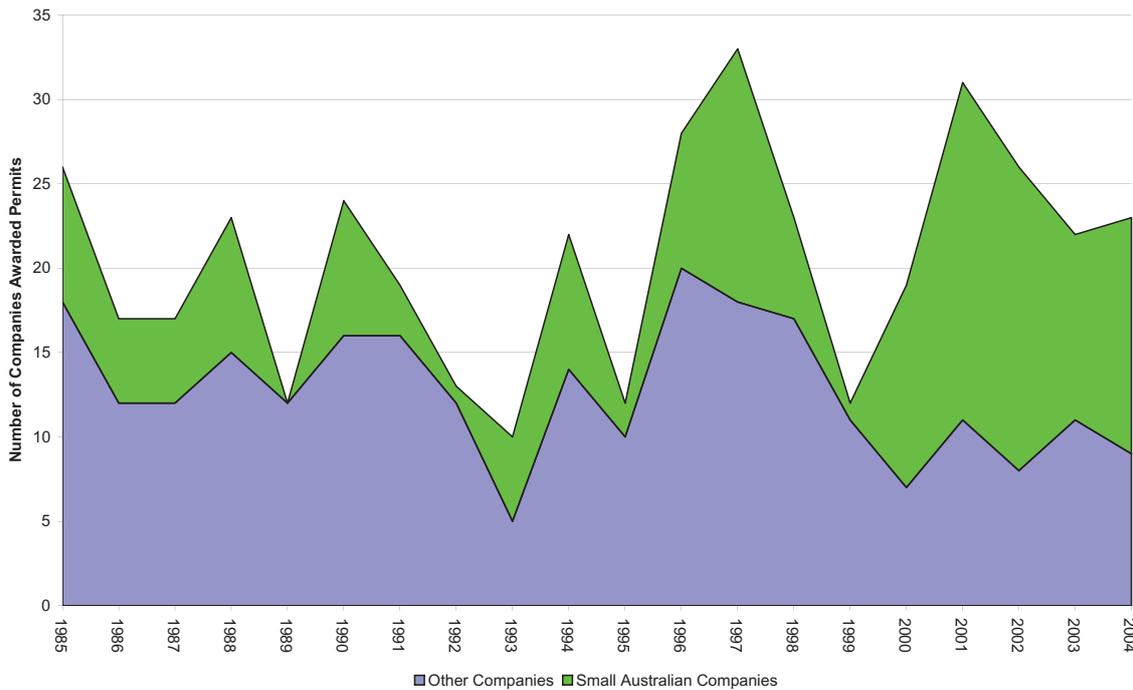


Figure 1.8 Small Australian companies awarded offshore exploration permits, 1985 to 2004

- Notes:**
1. Excludes data from the JPDA, State Waters and the former ZOC.
 2. Small Australian companies defined as those with a market capitalisation of less than A\$250 million.
 3. 2004 numbers have been estimated.

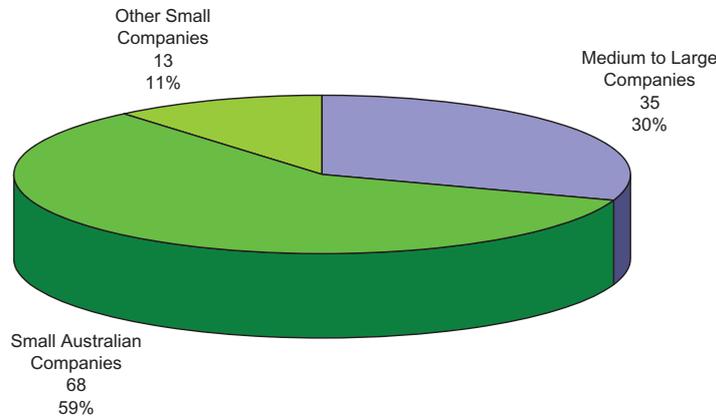


Figure 1.9 Number of Companies with Equity in Offshore Exploration Permits, as at May 2005

- Notes:**
1. Excludes data from the JPDA, State Waters and the former ZOC.
 2. Small Australian companies defined as those with a market capitalisation of less than A\$250 million.

As at May 2005, excluding exploration permits located in State Waters, a record number (approximately 160) of offshore exploration permits were in force (Figure 1.10). The number shown for 2005 does not include permits where bids are still under consideration from the 2004 Offshore Acreage Release Program or areas that may be awarded as permits from areas re-released in the second tranche of 2004.

With the exception of years 1985 and 1986 when several large, semi-regional permits were in force over significant portions of the offshore area, the total offshore area under permit is also at a near record level (Figure 1.10).

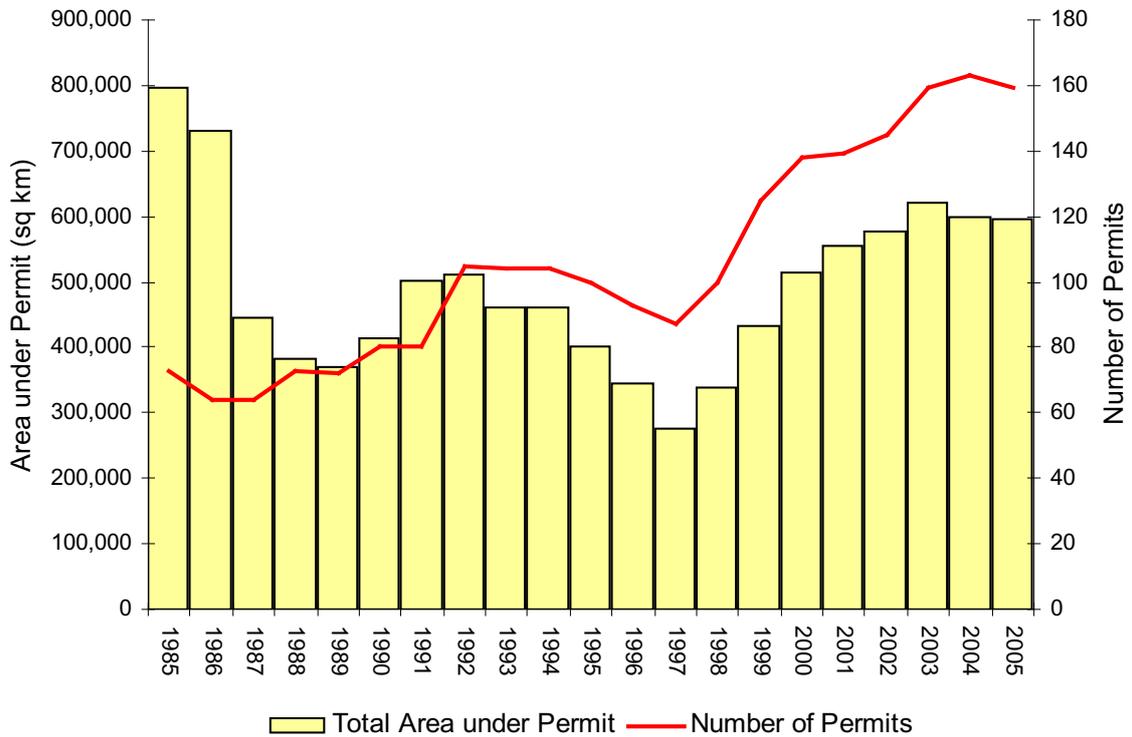


Figure 1.10 Number of exploration permits and total area under permit, offshore Australia

- Notes:
1. Excludes permits in State Waters.
 2. Excludes Retention Leases and Production Licenses.

2: Identified Resources

2.1 Basin geology and petroleum potential

Sedimentary rocks ranging in age from Proterozoic to Tertiary underlie approximately 4.3 million km² of Australia's land area and 2 million km² of Australia's continental shelf. 48 sedimentary basins are now recognised, 20 of which lie partly or wholly offshore (Figure 2.1). Australia's exclusive economic zone covers 10.2 million km² and its extended continental shelf beyond 200 m water depth covers a further 3.4 million km². A description and outline of Australia's geological provinces may be viewed at www.ga.gov.au/oracle/provinces/.

Petroleum systems active in Australian sedimentary basins and the history of Australian petroleum discovery to date have recently been reviewed by Bradshaw et al. (1999) and Longley et al. (2002).

Australia's petroleum reservoirs range in age from Proterozoic to Early Tertiary. Locally, the relationship between basins can be complex (e.g. the Galilee Basin overlies the Adavale Basin and underlies the Eromanga Basin). Regions denoted as 'basement' mainly comprise areas underlain by crystalline or tightly folded and/or metamorphosed rocks which are generally unprospective for petroleum.

Most of the oil discovered in Australia to date has been found in Tertiary siliciclastic sequences within the offshore Gippsland Basin. Significant oil and gas reserves have also been identified on the North West Shelf (offshore Carnarvon, Browse and Bonaparte Basins) and onshore, in the Cooper and Eromanga Basins.

Australian sedimentary basins from which petroleum has been recovered are shown in Table 2.1. Individual details about oil and gas fields are available in the *Australian Petroleum Accumulations* (APA) series of reports available from Geoscience Australia at <http://www.ga.gov.au/oceans/apa.jsp>; this includes an update of the Bonaparte Basin APA produced in 2003.

Table 2.1 Australia's petroleum reservoirs

Sedimentary Basin	Onshore / Offshore	Age of Petroleum Reservoir
Adavale	Onshore	Devonian
Amadeus	Onshore	Ediacaran & Ordovician
Bass	Offshore	Paleogene
Bonaparte	Offshore	Mesozoic & Permian
Bonaparte	Onshore	Carboniferous & Devonian
Bowen	Onshore	Permian & Triassic
Browse	Offshore	Mesozoic
Canning	Onshore	Permian, Carboniferous & Devonian
Carnarvon	Offshore & Onshore	Mesozoic
Clarence-Moreton	Onshore	Jurassic

Table 2.1 Australia's petroleum reservoirs (cont'd)

Sedimentary Basin	Onshore / Offshore	Age of Petroleum Reservoir
Cooper	Onshore	Permian & Triassic
Eromanga	Onshore	Cretaceous & Jurassic
Georgina	Onshore	Ordovician
Gippsland	Offshore & Onshore	Paleogene & Cretaceous
Gunnedah	Onshore	Permian & Triassic
McArthur	Onshore	Proterozoic
Otway	Offshore & Onshore	Mesozoic
Perth	Onshore	Jurassic, Triassic & Permian
Perth	Offshore	Cretaceous & Permian
Surat	Onshore	Jurassic
Sydney	Onshore	Permian & Triassic

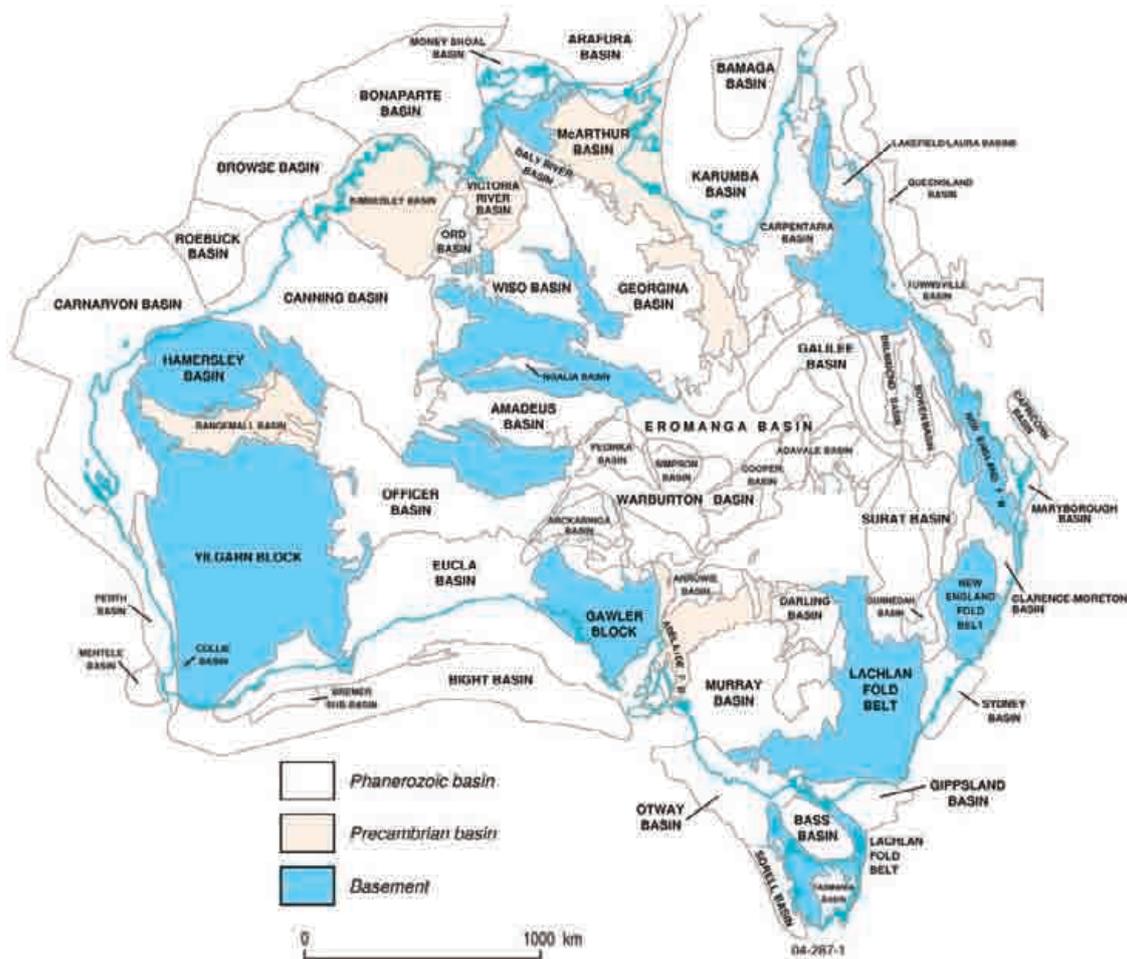


Figure 2.1 Australia's sedimentary basins

2.2 Offshore Discoveries of Petroleum in 2004

Figure 1.2 shows the location of all discoveries in Australia in 2004.

Bonaparte Basin

Katandra

Located within exploration permit AC/P24 in the Vulcan Sub-basin, the Katandra feature is a tilted fault block, on trend with the Jabiru, Challis and Cassini discoveries. It lies in water depths of around 110 m. In 2004, Avery Resources, a new foreign entrant to the Australian exploration industry, entered into an agreement with the operator of the permit (OMV Timor Sea Ltd) to take a 10% interest in a well to test the Katandra prospect.

Drilled by the semi-submersible drilling rig “Ocean Bounty” in December 2004, Katandra 1A targeted Upper Vulcan and Nome Formation reservoirs. At a depth of 1,369 m, the well intersected a 7 m column of 48° API oil within the Upper Vulcan Formation. Reservoir quality of the Upper Vulcan Formation at Katandra is excellent – approximately 22% porosity with multi-darcy permeability. Katandra 1A has been plugged and abandoned as a sub-commercial oil discovery.

Carnarvon Basin

Stickle and Harrison

In May 2004, Stickle 1 was drilled by BHP Billiton Petroleum Pty Ltd and Apache Northwest Pty Ltd within the Macedon/Pyrenees Retention Lease (WA-12-R). Located in the Exmouth Sub-basin approximately 5 km east of the Ravensworth oil discovery and 3 km east of the Crosby oil discovery, the well targeted the Pyrenees Sandstone Member of the Lower Barrow Group.

Stickle 1 was drilled to a total depth of 1648 m by the “Sedco 703” and intersected a 27 m oil column in the Pyrenees Sandstone Member. The oil discovery was confirmed by wireline logs, pressure data and wireline oil recovery but was not tested. In August 2004, an appraisal well (Stickle 2) and sidetrack (Stickle 3) were drilled 1.5 km northeast of the discovery well. Stickle-2 intersected a 23 m gross oil column.

Following the discovery of oil at Stickle, Harrison 1 was drilled in the adjacent fault block and intersected a 7 m oil column in the Pyrenees Sandstone Member.

The Stickle, Harrison, Crosby and Ravensworth oil discoveries are of similar size and quality and located in close proximity to each other on adjacent fault terraces. BHP Billiton Petroleum Pty Ltd is currently considering a combined development of the accumulations and is undertaking engineering studies to select a development option for the project (known as ‘The Pyrenees Development’).

Eskdale

Following the discovery of oil in the Macedon Sandstone Member of the Barrow Group at Stybarrow in 2003, BHP Billiton Petroleum PtyLtd and Woodside Energy Ltd drilled Eskdale 1 with the “Atwood Falcon”. Located 13 km to the north of Stybarrow in 793 m of water, in exploration permit WA-255-P, the well was plugged and abandoned after encountering encouraging oil shows.

A follow-up well (Eskdale 2) was drilled by the “Atwood Eagle” 2.3 km southwest of Eskdale 1 in April/May 2004. Wireline log data indicated Eskdale 2 intersected a 24 m gas column over a 13 m oil column. An oil/water contact was not encountered.

Gungurru

The Gungurru feature is a 4-way-dip closure located 10 km northeast of the Wandoo oil accumulation in exploration permit WA-202-P. The primary objective at Gungurru was the Early Cretaceous *M. australis* sand that forms the main oil reservoir at Wandoo. Pre-drill estimates indicated the Gungurru prospect could contain reserves of 9 million barrels (1.4 gigalitres) of oil.

In July 2004, the WA-202-P Joint Venture (led by Apache Northwest Pty Ltd), drilled Gungurru 1 to a total depth of 1,235 m using the “Ensco 56” drilling rig. The well intersected a 16 m gas column over a 4 m oil column. The Western Australian Department of Industry and Resources has estimated P₅₀ reserves for Gungurru at 1.2 million barrels of oil and 0.21 billion cubic feet of gas. Gungurru 1 has been plugged and abandoned as a sub-commercial oil and gas discovery.

Wheatstone

In December 2000, Iago 1 was drilled within exploration permit WA-25-P in the Carnarvon Basin and encountered gas in the Triassic Mungaroo Formation. Two Retention Leases were subsequently awarded over the gas discovery; WA-16-R and WA-17-R. In July/August 2004, in the WA-17-R Retention Lease, ChevronTexaco Australia Pty Ltd drilled Wheatstone 1 12 km west of the Iago gas discovery using the “Sedco 703” drilling rig.

Drilled to a total depth of 3,384 m in water depths of approximately 215 m, Wheatstone 1 intersected a 126 m gross gas column in 3 separate reservoirs within the Tithonian section and the Triassic Mungaroo Formation AA sands. On test, the well flowed gas at a rate of 54 million cubic feet per day from the lower AA sands (constrained by rig equipment). Gas analyses indicate the Wheatstone gas is dry and contains a low level of carbon dioxide.

Reserve estimates by the Western Australian Department of Industry and Resources indicate the Wheatstone resource is approximately 2.6 trillion cubic feet (73.6 billion cubic metres) in size.

Monet

Monet 1 was drilled in license area TL/1 by a Joint Venture comprising Apache Northwest Pty Ltd, Kufpec Australia Pty Ltd and Tap (Harriet) Pty Ltd in April 2004. Drilled by the “Ensko 56” to a total depth of 2242 m, the well tested a 4-way-dip closure at the Flag Sandstone level. Monet 1 intersected a 20 m gross oil column (18.2 m net) in the Flag Sandstone and an oil/water contact at 1,851.7 mTVD.

A development well (Monet 2H) was subsequently drilled from the nearby Simpson Bravo platform to a location approximately 2.7 km northeast of the platform. Production from Monet 2H (via the Simpson Bravo platform) commenced in June 2004 at a rate of 10,500 barrels of oil per day from a 149 m horizontal production interval within the Flag Sandstone.

The Western Australian Department of Industry and Resources estimates initial oil reserves (at the P₅₀ level) for Monet of 0.77 million barrels (0.12 gegalitres).

Altostratus

The Altostratus feature is located in exploration permit TP/17 in the Carnarvon Basin. Pre-drill reserve estimates indicated up 119 million barrels of oil (at the P₁₀ level) could be present at Altostratus in 4 separate target horizons: Cretaceous *M. australis* sands, Jurassic *C. halosa* and *N. gracilis* sands (Athol Formation) and sands of the Triassic Mungaroo Formation.

In November/December 2004, Strike Oil Ltd drilled Altostratus 1 to a total depth of 1,132 m using the “Ensko 56” drilling rig. The 3 shallowest target intervals (*M. australis* sands and Athol Formation sands) exhibited poor reservoir quality and only minor oil and gas shows were observed in these intervals. The Triassic Mungaroo Formation, however, showed good reservoir properties and a 3 m oil column was identified on wireline logs at the top of the unit.

Altostratus 1 was plugged and abandoned as a sub-commercial oil discovery.

Otway Basin

Martha

The Martha prospect was located in exploration permit VIC/P44, approximately 18 km north of the Casino gas field (over which a production license has recently been awarded) in the Otway Basin. The feature is a tilted fault block with 3-way-dip closure on the culmination of the greater Pecten High and lies in water depths of around 55 m. Pre-drill P₅₀ estimates indicated approximately 133 billion cubic feet (3.8 billion cubic metres) of gas could be present within sandstones of the Waarre Formation.

In October/November 2004, the VIC/P44 Joint Venture (comprising Santos Ltd, Australian Worldwide Exploration and Mitwell Energy Resources Pty Ltd) drilled Martha 1 with the semi-submersible drilling rig “Ocean Patriot” to a total depth of 1,800 m. The well intersected 24.5 m of gas bearing sandstones within the Waarre Formation but no fluids were recovered on test. Martha 1 was plugged and abandoned as a sub-commercial gas discovery.

Gippsland Basin

Moby

Located in exploration permit VIC/P47, approximately 5 km to the east of the Patricia-Baleen gas field in the Gippsland Basin, the Moby feature is a 4-way-dip closure at Gurnard and Barracouta Formation (Top Latrobe Group) levels. Prior to drilling, a seismic amplitude anomaly associated with the Moby prospect was identified on the Baleen 3D seismic dataset (which covers the western portion of the Moby structure). Pre-drill reserve estimates (at the P₅₀ level) indicated 51 billion cubic feet (1.4 billion cubic metres) of gas and 19 million barrels (3.0 gigalitres) of oil could be present at Moby.

The VIC/P47 Joint Venture (comprising Bass Strait Oil Company Ltd, Moby Oil & Gas Ltd and Eagle Bay Resources NL) spudded Moby 1 on 7 October 2004 using the semi-submersible drilling rig “Ocean Patriot”. The top of Gurnard Formation was intersected at 534 mSS (17 m high to prognosis) and the top of the Barracouta Formation at 566 mSS. Gas recovered on test confirmed Moby as a gas discovery and preliminary analysis of gas samples indicated the gas composition was predominantly methane with 1% carbon dioxide and no measurable hydrogen sulphide.

Results from Moby 1 confirmed the seismic amplitude anomaly identified on the Baleen 3D seismic data indicated the presence of gas and was concordant with the gas/water contact identified in the well. Post-drill proved and probable reserves for Moby were estimated at 60 billion cubic feet of gas. As the operator (Bass Strait Oil Company Ltd) considered there was potential for the accumulation to extend to the south and east, beyond the existing 3D seismic control, the Joint Venture acquired 148 km² of new 3D seismic data (Moby 3D seismic survey) in the permit. Results from the Moby 3D seismic survey indicated that the seismic amplitude anomaly associated with the Moby gas pool is discontinuous to the south and east and have downgraded reserve estimates for the Moby accumulation.

Bass Basin

Trefoil

In October/November 2004, a Joint Venture led by Origin Energy Resources Ltd drilled Trefoil 1 in exploration permit T/18P in the Bass Basin. The well was drilled to a total depth of 3,545 m using the “Ensko 102” jack-up drilling rig. Wireline logging and testing indicated the well intersected 50 m of net gas pay over 8 zones in good quality sandstone reservoirs within the Eastern View Coal Measures. These reservoirs are the same gas-bearing units currently being developed at the nearby Yolla gas and condensate accumulation as part of the BassGas Project.

Two intervals over the poorer quality gas-bearing sands intersected by the well were production tested. The first test, taken over the interval 3,141-3,150 m, flowed gas at a final rate of 16.3 million cubic feet per day (460,000 cubic metres per day) at a tubing pressure of 1,329 psi through a 48/64 inch choke. The gas flow was accompanied by approximately 145 barrels per day (23 cubic metres per day) of condensate and 43

barrels per day (1.2 cubic metres per day) of water. A second test conducted over the interval 3,040.5-3,046.5 m flowed gas at 9.9 million cubic feet per day (280,000 cubic metres per day) through a 56/64 inch choke with a flowing wellhead pressure of 645 psi. Compositional analysis of the gas indicates less than 3% carbon dioxide is present (less than one sixth the levels encountered in the nearby Yolla discovery) and an absence of hydrogen sulphide.

Estimates provided to the Australian Stock Exchange in December 2004 indicate an in-place resource of 200-300 billion cubic feet (5.7-8.5 billion cubic metres) of gas and 14-21 million barrels (2.2-3.3 giganlitres) of condensate is present at Trefoil. The T/18P Joint Venture is currently undertaking the requisite work to reach a decision on the commercial viability of development of the Trefoil discovery as an integral part of the overall BassGas Project. If the Trefoil accumulation is developed via a tie-in to the Yolla platform, the nearby White Ibis gas accumulation may also become a candidate for commercial development as part of the BassGas Project.

2.3 Identified resources

Australia's identified resources are compiled from Geoscience Australia's in-house data and data provided by companies and State and Northern Territory mines departments. Information on individual accumulations is provided in the Geoscience Australia series *Australian Petroleum Accumulations*. The reserves estimates at 1 January 2005 are presented in Table 2.2, and are categorised by basin. The corresponding estimates according to the McKelvey reporting system are listed in Table 2.3. Bonaparte Basin estimates include the total reserves in the JPDA with Timor-Leste.

Initial and remaining crude oil, condensate and gas reserves, together with production, for the period 1960–2004 are shown in Figure 2.2. Remaining crude oil reserves are continuing to show signs of a slow decline after having remained approximately unchanged since 1970. Increases in reserves through field growth continue to dominate additions to liquid reserves. More recently, reassessment of older gas discoveries has added a significant growth component to gas reserves along with important new discoveries.

There has been an overall decrease in crude oil reserves and an increase in condensate reserves for identified fields in the year to 1 January 2005. Oil reserves decreases are predominantly due to production exceeding discoveries in the period while recent gas discoveries have been the main contributor to the increase in condensate and gas reserves.

Australia relative reserves and production position is shown in Figure 2.3. The world reserves totals at end 2003 were 1266 billion barrels (201 giganlitres) of crude oil and 6076 trillion cubic feet (172 trillion cubic metres) of gas and production of crude oil was 68.5 million barrels per day (10.9 giganlitres per day) and gas was 253 billion cubic feet per day (7.2 billion cubic metres per day).

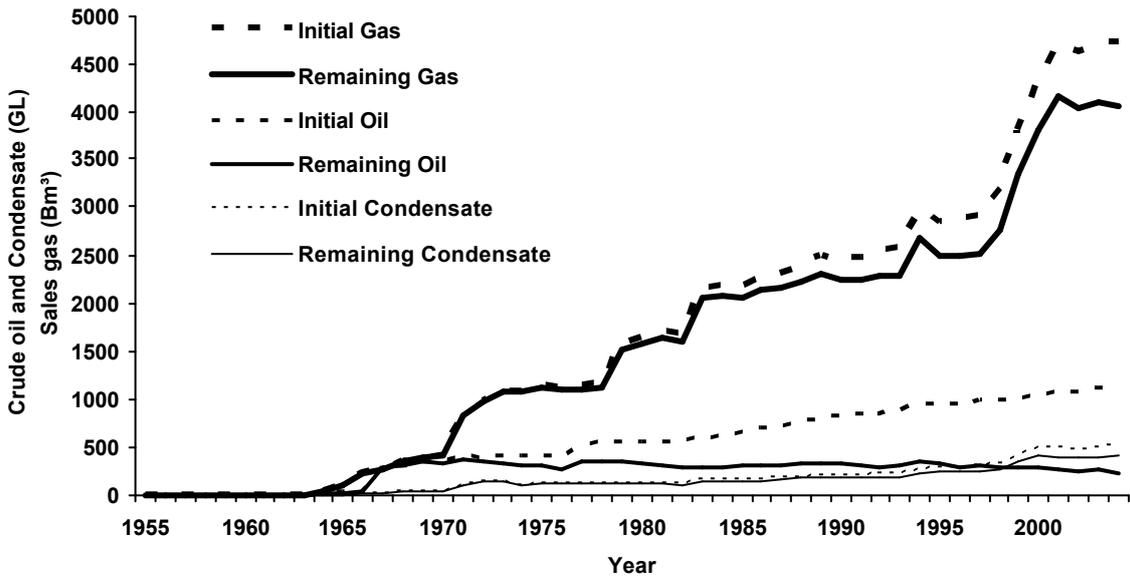


Figure 2.2 Australia's initial and remaining commercial plus non-commercial reserves of crude oil, condensate and sales gas

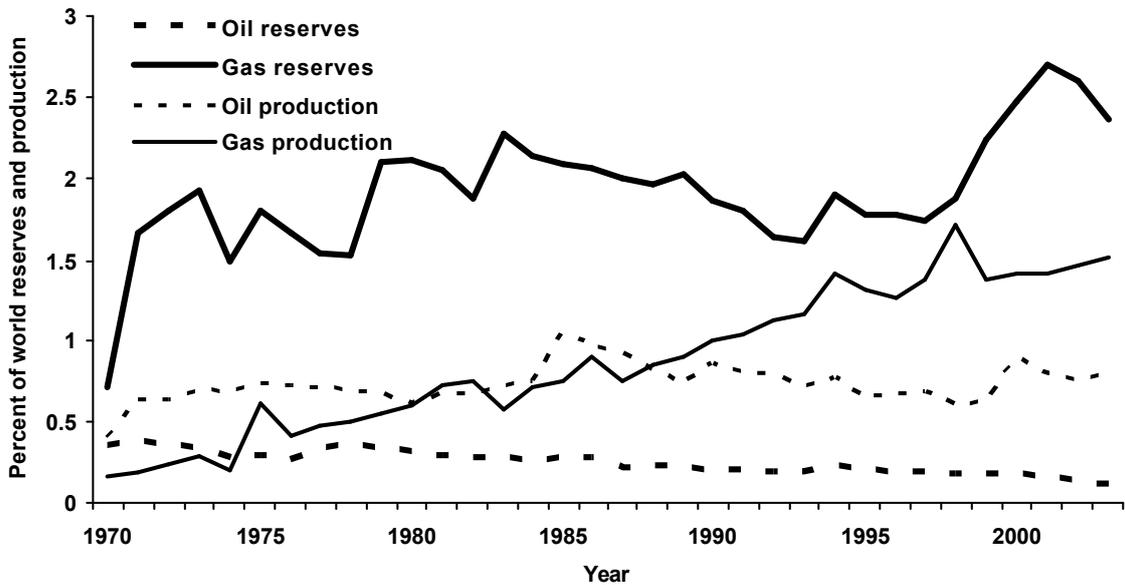


Figure 2.3 Australia's world ranking for crude oil and sales gas reserves and production

Table 2.2 Petroleum reserves estimates by basin as at 1 January 2005

Category Basin	Crude oil		Condensate		LPG		Sales gas	
	GL	million barrels	GL	million barrels	GL	million barrels	Bcm	Tcf
Category 1								
Adavale	0.00	0.00	0.00	0.00	0.00	0.00	0.36	0.01
Amadeus	0.54	3.40	0.39	2.45	0.25	1.59	5.44	0.19
Bonaparte	8.89	55.91	0.00	0.00	0.00	0.00	0.07	0.00
Bowen	0.03	0.19	0.07	0.45	0.08	0.48	1.70	0.06
Canning	0.02	0.11	0.00	0.00	0.00	0.00	0.00	0.00
Carnarvon	65.02	408.96	82.28	517.53	85.09	535.22	589.65	20.82
Cooper	1.05	6.60	2.62	16.47	4.54	28.57	34.53	1.22
Eromanga	5.20	32.68	0.02	0.10	0.00	0.00	0.26	0.01
Gippsland	31.00	194.98	15.40	96.86	27.10	170.45	119.60	4.22
Otway	0.00	0.00	0.02	0.12	0.00	0.00	1.04	0.04
Perth	1.80	11.29	0.00	0.01	0.00	0.00	1.09	0.04
Surat	0.04	0.24	0.01	0.09	0.02	0.11	0.93	0.03
TOTAL	113.58	714.37	100.81	634.07	117.08	736.43	754.66	26.65
PREVIOUS	127.47	801.78	101.23	636.73	120.73	759.34	782.08	27.62
Category 2								
Amadeus	0.00	0.00	0.00	0.00	0.00	0.00	0.56	0.02
Bass	2.11	13.28	6.88	43.26	9.31	58.55	14.78	0.52
Bonaparte	12.51	78.70	95.33	599.61	60.81	382.46	665.70	23.51
Bowen	0.00	0.00	0.01	0.03	0.01	0.07	4.35	0.15
Browse	2.16	13.59	86.40	543.44	69.67	438.19	732.98	25.89
Canning	0.00	0.00	0.00	0.00	0.00	0.00	0.18	0.01
Carnarvon	89.48	562.81	117.97	741.98	33.69	211.92	1,756.01	62.01
Cooper	0.06	0.40	0.78	4.88	0.86	5.39	9.74	0.34
Eromanga	0.35	2.21	0.05	0.30	0.06	0.40	0.51	0.02
Gippsland	14.67	92.27	4.62	29.03	0.40	2.52	58.03	2.05
Gunnedah	0.00	0.00	0.00	0.00	0.00	0.00	0.34	0.01
Otway	0.00	0.00	2.56	16.08	0.00	0.00	47.97	1.69
Perth	2.86	17.99	0.30	1.89	0.00	0.00	22.78	0.80
Surat	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL	124.21	781.25	314.88	1,980.50	174.81	1,099.50	3,313.91	117.03
PREVIOUS	137.81	866.79	296.27	1,863.47	193.05	1,214.27	3,316.16	117.11
GRAND TOTAL	237.78	1,495.62	415.68	2,614.57	291.89	1,835.93	4,068.57	143.68
PREVIOUS TOTAL	265.28	1,668.57	397.50	2,500.20	313.78	1,973.61	4,098.24	144.73

NOTES

Category 1 comprises current reserves of those fields which have been declared commercial. It includes both proved and probable reserves.

Category 2 comprises estimates of recoverable reserves which have not yet been declared commercially viable; they may be either geologically proved or are awaiting further appraisal.

For McKelvey resource classification see Table 2.2.

"Previous" totals refer to revised estimates of remaining reserves for the previous year.

Table 2.3 McKelvey classification estimates by basin as at 1 January 2005

Category Basin	Crude oil		Condensate		LPG		Sales gas	
	GL	million barrels	GL	million barrels	GL	million barrels	Bcm	Tcf
Economic Demonstrated Resources								
Adavale	0	0	0	0	0	0	0	0
Amadeus	1	3	0	2	0	2	5	0
Bass	1	7	2	14	2	12	8	0
Bonaparte	11	69	84	530	61	382	308	11
Bowen	0	0	0	0	0	0	2	0
Canning	0	0	0	0	0	0	0	0
Carnarvon	102	642	193	1215	119	747	2045	72
Cooper	1	7	3	16	5	29	35	1
Eromanga	5	31	0	0	0	0	0	0
Gippsland	35	218	16	101	27	171	144	5
Otway	0	0	2	15	0	0	37	1
Perth	2	11	0	0	0	0	1	0
Surat	0	0	0	0	0	0	1	0
TOTAL	157	988	301	1894	214	1343	2587	91
PREVIOUS	187	1175	284	1787	235	1481	2594	92
Subeconomic Demonstrated Resources								
Amadeus	0	0	0	0	0	0	1	0
Bass	1	6	5	30	7	47	7	0
Bonaparte	10	66	11	70	0	0	358	13
Bowen	0	0	0	0	0	0	4	0
Browse	2	14	86	543	70	438	733	26
Canning	0	0	0	0	0	0	0	0
Carnarvon	52	330	7	45	0	0	301	11
Cooper	0	0	1	5	1	5	10	0
Eromanga	1	4	0	0	0	0	1	0
Gippsland	11	70	4	25	0	2	33	1
Gunnedah	0	0	0	0	0	0	0	0
Otway	0	0	0	1	0	0	12	0
Perth	3	18	0	2	0	0	23	1
Surat	0	0	0	0	0	0	0	0
TOTAL	81	507	114	720	78	492	1482	52
PREVIOUS	79	494	113	713	78	493	1504	53
GRAND TOTAL	238	1496	416	2615	292	1836	4069	144
PREVIOUS TOTAL	265	1669	398	2500	314	1974	4098	145

NOTES

Economic Demonstrated Resources are resources judged to be economically extractable and for which the quantity and quality are computed partly from specific measurements, and partly from extrapolation for a reasonable distance on geological evidence.

Subeconomic Demonstrated Resources are similar to Economic Demonstrated Resources in terms of certainty of occurrence and, although considered to be potentially economic in the foreseeable future, these resources are judged to be subeconomic at present.

For traditional petroleum industry classification see Table 2.1.

"Previous" totals refer to revised estimates of resources for the previous year.

References

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Longley, I.M., Bradshaw, M.T. and Heberger, J., 2002. Australian petroleum provinces of the 21st century. In: Downey, M., Threet, J. and Morgan, W., eds, *Petroleum Provinces of the 21st Century*, AAPG Memoir 74.

3: Opportunity for growth

3.1 Medium-term potential for the Exmouth Sub-basin

During 2004-2005, an updated assessment of the undiscovered resources of the Exmouth Sub-basin was undertaken. Like previous assessments, three drilling scenarios have been assessed. The results for the medium drilling scenario (20 wells over 15 years) reveal there is a medium-term risked mean expectation for

- 12 gegalitres or 74 million barrels of oil, and,
- 0.3 billion cubic metres or 12 billion cubic feet of gas.

Due to the small gas volumes, no assessment was made for condensate.

Introduction

The last assessment undertaken by Geoscience Australia in this area was for the whole of the Carnarvon Basin. This was published in 1998 (Australian Geological Survey Organisation, 1998) and it gave a mean expectation of 600 million barrels (95 gegalitres) of gas and 21 trillion cubic feet (595 billion cubic metres) of gas.

Table 3.1 shows in more detail the results of the assessment, with an expansion of the summed drilling scenarios shown in Table 3.2.

Table 3.1 Summary of risked means for different drilling models for the Exmouth Sub-basin assessment units

	Oil (mmb)	Oil (GL)	Gas (bcf)	Gas (mcm)
Western assessment unit				
Low scenario (4 wells)	41	6.4	7	0.2
Medium scenario (10 wells)	65	10.3	12	0.3
High scenario (15 wells)	71	11.3	13	0.4
Eastern assessment unit				
Low scenario (4 wells)	8	1.2	0	0
Medium scenario (10 wells)	9	1.5	0	0
High scenario (15 wells)	10	1.6	0	0

Table 3.2 Details of summed assessments – risked volumes

		P₉₀	P₅₀	P₁₀	Mean
Low drilling scenario – 4 wells in both assessment units					
Oil	mmb	0	31	114	48
	GL	0	4.9	18.2	7.7
Gas	bcf	0	0	44	7
	bcm	0	0	1.2	0.2
Medium drilling scenario – 10 wells in both assessment units					
Oil	mmb	10	53	163	74
	GL	1.6	8.5	25.9	11.7
Gas	bcf	0	0	66	12
	bcm	0	0	1.9	0.3
High drilling scenario – 15 wells in both assessment units					
Oil	mmb	13	59	174	81
	GL	2.0	9.4	27.6	12.8
Gas	bcf	0	0	68	13
	bcm	0	0	1.9	0.4

Discussion

As in previous studies the AUSTPLAY methodology was used (see Petrie and others, 2002 for details). Two Jurassic oil assessment units were defined based upon models of oil generation and migration outlined by Smith and others (2003). In previous assessments the term “petroleum system” has been used. According to Magoon and Dow (1994) the extent of a petroleum system includes the generative source pod, the migration paths and the trapped hydrocarbons. This is acceptable for basins with a simple history but for basins such as the Exmouth Sub-basin which have undergone a complex hydrocarbon charge history, it is very difficult to define the petroleum system in this way. In this assessment, the unit of assessment has been defined as the “shrink-wrap” of associated discoveries; hence the use of the term “assessment unit”.

Figure 3.1 illustrates the two assessment units.

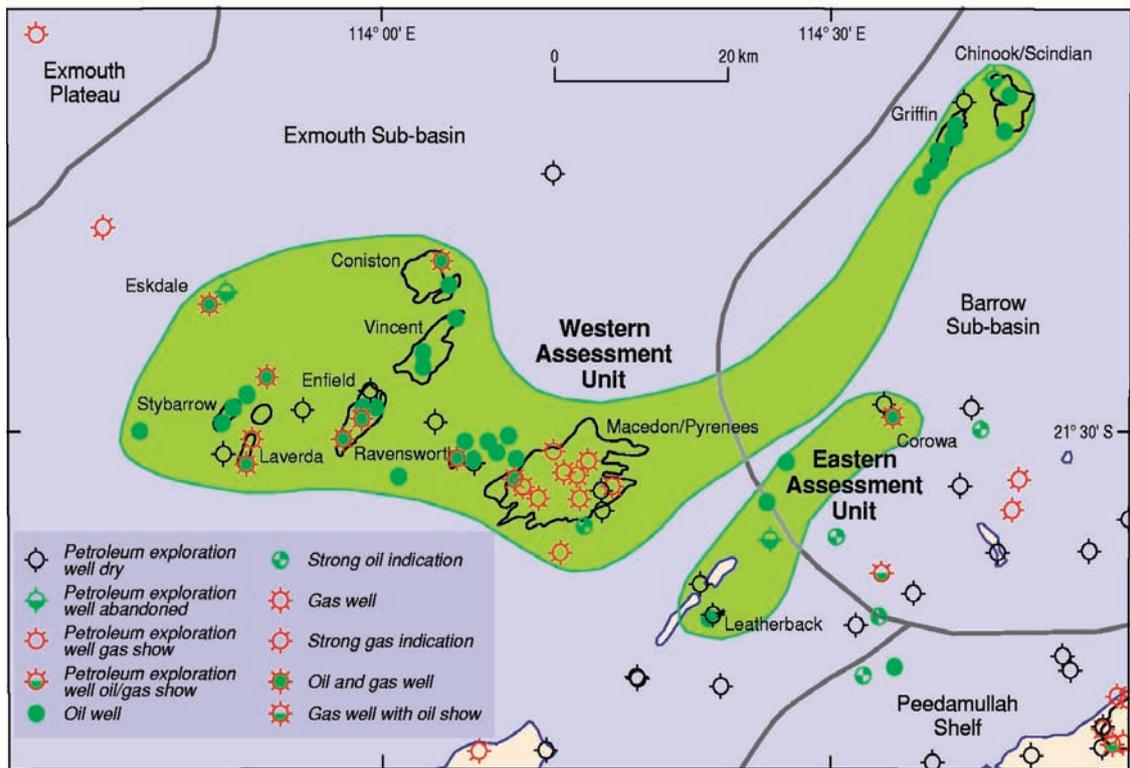


Figure 3.1 Assessment Units for the Exmouth Sub-basin and southern Barrow Sub-basin

In the Western Assessment Unit the discoveries include Chinook, Crosby, Enfield, Eskdale, Griffin (attributed in time to the Hilda 1A well), Harrison, Laverda, Macedon/Pyrenees (attributed in time to the West Muiron 3 well), Novara (including Coniston), Ravensworth, Scafell, Stybarrow and Vincent. A total of in excess of 600 million barrels has been discovered. This assessment unit has been the most actively explored oil province in recent times and more exploration drilling is anticipated. Within the confines of the assessment unit, modelling suggests that remaining targets are not large. What is required is a discovery that expands the area of the assessment unit.

The Eastern Assessment Unit contains the Blencathra, Caretta, Corowa, Leatherjacket and Outtrim discoveries. While the success rate on this small trend has been high, the discovered volumes are small. Unless the areal extent of this assessment unit can be expanded, the remaining potential is also limited.

The discoveries in the Exmouth Sub-basin are all closely associated so that the area of the assessment unit is not large. This has meant that it is difficult to assess what the potential is for the remaining part of the Exmouth Sub-basin. The AUSTPLAY methodology is clearly only appropriate for areas that have had discoveries. Geoscience Australia is researching other methodologies that would allow a play assessment to be undertaken in areas without discoveries.

AUSTPLAY modelling also provides an estimate of the size of individual discoveries and how many wells are required to achieve the discoveries. For the Western assessment unit, the first discovery can be expected with the drilling of the 1.6th well with a mean expected volume of 30 million barrels or 4.8 gegalitres of oil ($P_{10} = 67$

mmb, $P_{90} = 6$ mmb) while for the Eastern assessment unit the first discovery can be expected with the drilling of the 1.4th well with a mean expected volume of 24 million barrels or 3.8 giganlitres of oil ($P_{10} = 43$ mmb, $P_{90} = 7$ mmb).

This assessment appears small compared to the US Geological Survey World Petroleum Assessment (2000) results for the Carnarvon Basin but it must be remembered that the USGS assessment has been adopted as a measure of the ultimate potential for the Carnarvon Basin (see Powell, 2001) while this assessment is an estimate of what could be discovered by exploration drilling in the next ten to fifteen years. The mean of the USGS assessment for the Carnarvon Basin is:

- 2,380 million barrels (380 giganlitres) of oil,
- 64.7 trillion cubic feet (1.8 trillion cubic metres) of gas, and,
- 3,682 million barrels (585 giganlitres) of natural gas liquids.

Reserves growth in the Exmouth Sub-basin

Geoscience Australia has been researching the effect of the contribution that reserves growth makes to Australia's remaining reserves. In *Oil and Gas Resources of Australia 2002* (Petrie and others, 2003), a reserves growth model was presented for growth from date of discovery. Reserves growth models for growth from production startup and growth by wells drilled have also been investigated (Petrie and others, 2005).

Using the reserves growth model from date of discovery, both oil and gas in already discovered accumulations could increase by about 25% in the next fifteen years. This is significantly more than what has been modelled to be discovered. It is not appropriate to use the model for reserves growth from production startup as only Griffin and Chinook are in production. Within the next few years more Exmouth Sub-basin discoveries will be producing.

This phenomenon of reserves growth contributing more than new discoveries has been seen elsewhere in Australia and should always be considered when determining opportunities for growth in reserves.

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4: Offshore developments

4.1 Gippsland Basin

Basker-Manta-Gummy

The Basker, Manta and Gummy fields are located in the offshore Gippsland Basin in Retention Leases VIC/RL6, VIC/RL9 and VIC/RL10. The Basker field was discovered by the Basker 1 well in 1983 and the Manta field was discovered by the Manta 1 well in 1984. The Basker 1 well discovered twelve thin oil and gas reservoirs in the lowermost part of the Latrobe Group. Follow-up wells in the adjacent Manta and Gummy structures (1984 and 1990) discovered further oil and gas reservoirs.

In October 2005 Anzon Australia Limited commenced a six month extended production test from the Basker field using the FPSO vessel, the Crystal Ocean. The test production rates from the Basker 2 appraisal well were approximately 1,431 kL/d (9 kbbbl/d). The production rates are expected to rise to about 3,178 kL/d (20 kbbbl/d) during peak production when the fields are fully developed in mid-2006.

Full field development of the Basker field is planned to consist of the Basker 2 well plus up to four oil wells and one gas injection well. The Basker and Manta fields are to be developed on a stand-alone basis through the use of the turret-moored Floating Production Storage and Offloading vessel (FPSO) Crystal Ocean. The development wells will be tied back to the FPSO via subsea manifolds. Two manifolds are proposed, one for each of Basker and Manta fields. Oil produced during the extended test and later during full production will be transferred to the 103,342 kL (650 kbbbl) capacity tanker Basker Spirit (formerly the Nordic Yukon) for storage and subsequent sale. The Crystal Ocean's process capacity is 5,883 kL (37 kbbbl/d) of oil and 1.5 million m³ (53 million scf/d) of gas. The vessel is dynamically positioned and has accommodation for 40 personnel.

Kipper

In June 2005, Esso submitted to the Government an application for a Production Licence for the Kipper gas and oil field. Front-end engineering and design is expected to commence in the first half of 2006 while production from the field is expected to commence in 2009.

The field is located approximately 42 km offshore from the Gippsland coastline, about 60 km east of Lakes Entrance, in water depth of approximately 100 m. One part of the field is under Retention Lease VIC/RL2 granted to Esso (operator, 25%), BHP Billiton (25%), Woodside (30%) and Santos (20%), while another part is in Production Licence VIC/L9 granted to Esso (operator, 50%) and BHP Billiton (50%). As part of the Memorandum of Understanding between the partners of the Retention Lease VIC/RL2 and Production Licence VIC/L9, the Kipper field will be developed via unitisation.

The joint venture partners propose to develop the Kipper field by installation of a number of subsea wells and associated subsea pipeline infrastructure. The recovered

gas would then be piped through existing Esso and BHP Billiton infrastructure and processing facilities. Development of the field is estimated to cost between A\$250 million and A\$300 million.

4.2 Otway Basin

Casino

A production licence (VIC/L24) for Casino development was granted to Santos in April 2005 and development is progressing as scheduled. The development drilling phase, comprised Casino 4 and 5 wells, which were successfully drilled and completed for production. New 35 km offshore and 12 km onshore pipelines are being constructed. The onshore and offshore sections are linked using a horizontally directionally drilled shore crossing at Two Mile Bay. First gas is anticipated from the Casino gas project in the first quarter of 2006.

The Casino gas field was discovered in September 2002 by the Casino 1 well which encountered a 47-metre gas column in the Waarre Sandstone. The field is located offshore 29 km southwest of Port Campbell in 70 m of water.

The Casino development includes the drilling of subsea completed development wells and the installation of a pipeline from the field to underneath the coastline near Port Campbell, continuing to the existing Iona gas plant and underground storage site. Gas will be processed in the plant prior to its distribution to Victorian and interstate customers through the existing pipeline network. Small quantities of water and condensate will be removed at the Iona plant facility. The water will be disposed of through the plant's existing water treatment facility and the condensate will be stored for transport to the Geelong refinery, by road tankers approximately two to three times a week. Condensate production from the Casino gas field is expected to decline significantly after one to two years of operation.

The Henry 1 exploration well, located 8.5 km northwest of the Casino gas field, also successfully located gas in the Waarre Sandstone reservoir and was declared a new field discovery.

Geographe and Thylacine

Government approval for the development of the Thylacine and Geographe gas-condensate fields was granted to Woodside in April 2004. In May 2004 the Joint Venture Partners approved development of both fields. Construction work started in early 2005 and is progressing as scheduled. The production start up is expected around mid 2006.

The fields are located in the offshore Otway Basin 55-70 km south of Port Campbell, Victoria. The fields lie in production licences VIC/L23 (Geographe) and T/L2 (Thylacine). The Thylacine and Geographe fields were discovered in 2001 by the drilling of the Thylacine 1 and Geographe 1 exploration wells following the 1999 Investigator 3D seismic programme. Thylacine 1 was drilled in May 2001 and

discovered a 281 m gross gas column. The Thylacine 2 appraisal well was drilled in August 2001 and discovered a 230 m gross gas column. Geographe 1 was drilled in June 2001 approximately 15 km north of the Thylacine discovery, and recovered gas by wireline formation sampler at three levels: 1,831.7 mRT, 1,896.4 mRT and 2,015.8 mRT.

Thylacine and Geographe fields will be developed in stages. The first stage of the project involves the initial expenditure of A\$810 million for the development of the Thylacine gas field in offshore Tasmania licence T/L2, about 70 km south of Port Campbell in a water depth of 100 m. The Geographe gas field, 55km south of Port Campbell in offshore Victoria licence VIC/L23, will be connected to the main offshore pipeline about 2-3 years after Thylacine comes into production. The total project cost is estimated to be A\$1.1 billion.

The first stage of the project includes:

- Construction of the onshore gas processing plant north of Port Campbell near the existing Iona facility,
- Construction of the 11.5 km onshore pipeline from the shore crossing to the gas plant,
- Shore crossing at Port Campbell,
- 70 km of offshore pipeline tied-in to the Thylacine offshore platform,
- Construction and installation of the offshore platform over the Thylacine gas field,
- Drilling of the four Thylacine production wells.

Initially the Otway Gas Project will produce about 1.557 BCM (55 BCF) of sales gas a year.

Minerva

In early 2005 the first gas production was achieved from the Minerva gas field operated by BHP Billiton. The field is located in the Otway Basin, in VIC/L22 permit, approximately 10 km from Port Campbell in 60 m of water. It was discovered in 1993 by the Minerva 1 exploration well. The field is producing at a rate of 3.82 million m³/d (135 million scf/d) of sales gas, and up to 79.5 kL/d (500 bbl/d) of stabilised condensate. The development consists of two subsea wells producing through a 10 inch diameter, 10km long pipeline to shore. The pipeline crosses the shore via a directionally-drilled crossing under the beach and then moves to the gas processing plant a further 4.5 km inland. The field has an expected life of 10 years.

4.3 Bass Basin

Yolla

The Yolla development has suffered from some delays due to the identification of a number of defects in the key systems of the project. Defect rectification works is

continuing on the project and commissioning of the onshore plant and production from the Yolla field is expected in the first quarter of 2006.

The Yolla gas and oil field is located in production licence T/L1 in the Bass Basin, 120 km offshore from Tasmania and 220 km southeast of Melbourne in a water depth of 80 m. The field was discovered in 1985 by Amoco's Yolla 1 well which intersected gas in the Intra-Eastern View Coal Measures (EVCN) reservoir units between 2718 and 3000 m. Yolla 1 also tested oil and gas from the Top EVCN reservoir unit at around 1800 m. Yolla 2 was drilled in 1998 as a downdip appraisal of the gas column intersected in Yolla 1 and tested gas in the Intra-EVCN reservoir. The Yolla field development consists of:

- Conventional steel platform.
- Two deviated development wells.
- 350 mm diameter 147 km long plain carbon steel subsea pipeline for the export of raw gas and condensate to an onshore treatment plant near Lang Lang in Victoria.
- Subterranean shore crossing near Kilcunda in Victoria.
- Water handling facilities in excess of 95.3 kL/d (600 bbl/d), gas dehydration and compression facilities.
- Provision for the tie-in of additional Yolla gas reserves and future discoveries and provisions for wellhead compression facilities.

A further two wells are planned in future to maintain deliverability. The offshore platform will not normally be staffed. The platform supports the wellheads and the gas processing facilities used to treat the gas extracted from the undersea reservoir to the quality where it can be piped to shore. The water extracted with the gas-stream will be separated, treated on the platform and then discharged overboard.

4.4 Bonaparte Basin

Puffin

On 23 September 2005 AED Oil Ltd submitted a Preliminary Field Development Plan (PFDP) for the Puffin oil field. The field is located in the Territory of Ashmore and Cartier Islands Exploration Permit AC/P22 in the Vulcan Sub-Basin. The Permit is located approximately 80 km southwest of the Jabiru and Challis oil fields and approximately 25 km from the Skua oil field. The Company acquired its interest from Century and its nominee Attune on 31 January 2005.

Development of the field is proposed using the conventional Floating Production Storage and Offloading vessel (FPSO) arrangement based on the utilisation of subsea well completions and flexible flowlines and umbilicals connected to an FPSO. Storage capacity in the FPSO will allow the transfer of stabilized crude oil to shuttle tankers for transport to market.

The Puffin 7 development well is planned to be drilled to produce oil from the Puffin North East area and the Puffin 8 development well is planned to be drilled to produce oil from the Puffin Central Area.

It is planned that Puffin 7, 8 and 9 (if successful) will be produced as subsea wells to the FPSO *Gerrita* in December 2006. AED's estimate of most likely reserves in the Puffin North East area is 1.32 GL (8.3 million bbl) and in the Puffin Central area 0.95 GL (6.0 million bbl). The production rates are expected at approximately 3975 m³/d (25 kbbbl/d). The field life is currently estimated to extend to 2010.

4.5 Browse Basin

Ichthys

INPEX Browse Ltd is evaluating various developmental scenarios for the Ichthys field, including such possibilities as LNG and GTL supply, as well as the pipeline supply of raw gas to Australia, targeting the initiation of commercial production after 2010.

The Ichthys field was first indicated by the Brewster 1A exploration well drilled by Woodside in 1980 in the exploration permit WA-285-P. INPEX acquired a 100% interest in WA-285-P in August 1998 and conducted a 2D seismic survey in the same year. In 2000 and early 2001, INPEX drilled three exploration wells and tested gas and condensate from each. WesternGeco acquired 3D seismic data as part of a Multiclient survey in this region in 2001 and INPEX purchased and reprocessed a part of this data for evaluation. In 2003 and early 2004, INPEX drilled three more exploration and appraisal wells, and confirmed gas and condensate from all three wells.

4.6 Carnarvon Basin

Angel

In May 2005, Woodside submitted the final field development plan for the Angel gas field to the Government. The development drilling is planned to begin in 2007, with the platform due to be fully operational by the end of 2008.

The Angel gas-condensate field is located in 80 m of water approximately 53 km east-northeast of North Rankin A and some 123 km northwest of the onshore gas plant at Dampier. The field lies entirely within the Angel Primary Production Licence WA-3-L.

The Angel field was initially delineated by 2D seismic in the late 1960s to early 1970s and discovered in 1971 by the Angel 1 well. The Angel discovery was subsequently appraised by two wells, Angel 2 and Angel 3, drilled during the early 1970s. The Angel 4 appraisal well was drilled during 1990 in the northwest area of the Angel field, intersecting a gross gas column of some 67 metres. In December 1977 Woodside made an application for the Primary and Secondary Production Licences over the Angel field which were awarded to the North West Shelf Venture on September 30 1980.

The Angel field development consists of a Jacket type platform capable of processing 22.65 million m³/d (800 million scf/d) and 949 kL/d (50 kbbbl/d) of condensate via 3 individually tied back subsea wells. The processed gas will be exported via a 49 km, 30 inch diameter carbon steel pipeline tied into the NWS first trunkline and commingled with the production from the North Rankin A facilities. The Angel gas field has an expected field life of approximately eight years. The 7,500 tonne Angel jacket substructure and 7,000 tonne topside are expected to be fully operational by the fourth quarter of 2008.

Enfield

Woodside's Enfield oil project is more than 60% complete, with first oil production expected in the fourth quarter of 2006. Progress is being made on the construction of the facility, which is being built at Samsung Heavy Industries' shipyard in South Korea. In April 2005 the FPSO *Nganhurra* was launched from its floating dry dock. Topsides facilities were installed and integrated with the hull during the remainder of 2005. In March 2005 the Transocean operated semi submersible drilling rig *Jack Bates* started work on the drilling of 13 wells that will be needed to develop the Enfield oil discovery. This drilling campaign will take about 12 months to complete.

The Enfield oil field is located approximately 16 km north of the northernmost part of Ningaloo Reef in exploration permit WA-271-P in offshore Carnarvon Basin. Five wells have appraised the Enfield accumulation. All except Enfield 2 tested heavily biodegraded oil with an API of 22°, while a gas cap was encountered in Enfield 5 well.

The Enfield development comprises subsea wells tied back with flowlines to the FPSO *Nganhurra*. The *Nganhurra* is of double hulled construction, disconnectable mooring, has its own propulsion system to allow evasion of tropical cyclones and a storage capacity of approximately 143,000 m³ (900 kbbbl). In normal operations an offshore crew of around 34 personnel will be on board the vessel. After stabilisation on the FPSO, export crude oil will be stored in the FPSO's tanks and periodically exported through an offloading hose to tandem moored offtake tankers. Typical export cargoes will be approximately 87,500 m³ (550 kbbbl). Production is expected to extend over a long period, and the facilities have been designed for 20 years operation. The FPSO is intended to remain on station for the entire design life without recourse to dry docking for maintenance or survey.

The FPSO will be positioned west of Enfield in a water depth of 550 m. The produced water and surplus gas will be reinjected back into the reservoir unit. Five production wells (four horizontal, one vertical), two gas injection wells and six water injection wells will be drilled and there is provision for additional infill wells.

Exeter and Mutineer

The Mutineer-Exeter fields commenced production on 29 March 2005. Production rates during the second quarter 2005 averaged 11,447 kL/d (72 kbbbl/d). The fields are located in the northern part of the Dampier Sub-basin of the Carnarvon Basin in Western Australia in water depths ranging from 140 to 160 metres. The fields are

approximately 150 km north of Dampier and 40 km north of the *Cossack Pioneer* FPSO.

The fields are produced via a FPSO vessel moored between the two fields, horizontal production wells equipped with down-hole electrical pumps to provide artificial lift and seabed multi-phase pumps at production and pumping manifolds. One production and pumping manifold is positioned at each field. Provision is also included for water injection if necessary. Subsea flowlines connect each of the Mutineer and Exeter production manifolds to the FPSO. The FPSO is a disconnectable, turret moored unit with product offloading to trading tankers via a floating hose and provision for processed crude oil storage. All process separation and treatment of the Mutineer and Exeter fluids occur onboard the FPSO. The production capacity for the FPSO is 22 ML/d (140 kbb/d), with a design oil throughput of 16 ML/d (100 kbb/d). Current production rates are on average between 11.1 and 12.7 ML/d (70 and 80 kbb/d). The field life is estimated at 7 to 12 years.

Gorgon

In July 2005 ChevronTexaco Australia Pty Ltd announced its decision to move the Greater Gorgon development into the Front End Engineering and Design (FEED) phase. The FEED scope includes the establishment of a two train (10 mtpa) LNG facility and domestic gas plant on Barrow Island, which lies directly between the Greater Gorgon gas fields and the Western Australian mainland.

The Gorgon gas project involves the establishment of a liquefied natural gas facility on Barrow Island. The Greater Gorgon area is situated approximately 130 km off the northwest coast of Western Australia and includes Gorgon, West Tryal Rocks, Spar, Chrysaor, Dionysus, Io/Jansz, Orthrus, Geryon and Urania fields. The Greater Gorgon area fields contain publicly reported gas reserves in excess of 1,100 BCM (40 Tcf).

The Gorgon field development consist of subsea development wells, a sub-sea gathering system and a 70 km sub-sea pipeline to Barrow Island and a gas processing facility located on Barrow Island. The base case for the initial development of the Gorgon and Jansz-Io fields is a two-train Liquefied Natural Gas (LNG) processing facility producing approximately 10 million tonnes of LNG per annum, plus deliver 9.8 million m³/d (300 million scf/d) of natural gas to existing mainland domestic gas infrastructure. Carbon dioxide would be removed and re-injected into the deep saline water reservoirs.

Jansz-Io

In June 2005, Mobil Exploration and Producing Australia Pty Ltd submitted to the Government the preliminary field development plan for the Jansz-Io gas field, as a precursor to an application for a Production Licence.

The Jansz-Io gas field is located in the Kangaroo Trough of the Carnarvon Basin approximately 200 km off the coast of Western Australia in 1,325 metres of water. The field was discovered in April 2000 by the Jansz 1 well in permit WA-268-P (now in retention lease WA-18-R). This was followed by Io 1 in January of 2001 in the

adjacent permit (now WA-25-R). Appraisal wells Jansz 2 and Jansz 3 were drilled in 2002 and 2003, respectively. The Jansz 3 well was production tested and confirmed the high reservoir quality and deliverability of the Jansz-Io gas field.

It is proposed to develop the Jansz-Io field in conjunction with the Gorgon field. Each field will supply gas to a new build LNG plant located on Barrow Island. Initial development of Jansz-Io will be completely subsea with full wellstream production delivered to the onshore LNG plant via a single 30 inch carbon steel flowline.

It is proposed to develop the field in stages. The initial development will include a single 6-slot manifold and five large bore development wells with a 30 inch carbon steel flowline, an 8 inch Mono Ethylene Glycol line and an 8 inch utility line back to Barrow Island. Stage 2 developments will add a second 6-slot manifold and 5 additional development wells, approximately 12 years after start-up. Finally, approximately 20 years after start-up, an offshore compression facility will be installed along with the associated risers, flowlines and infrastructure.

John Brookes

Production from the John Brookes gas field commenced in September 2005, producing at an initial flow rate of approximately 1.7-2.3 million m³/d (60-80 million scf/d). John Brookes is located some 60 km northwest of Varanus Island.

John Brookes was discovered in November 1998 by the John Brookes 1 exploration well. John Brookes 1 well was drilled to a total depth of 3,741 metres in a water depth of 20 metres and intersected an 80 m gross hydrocarbon column. The well was tested over two separate zones and achieved a combined flow rate of 1.51 million m³/d (53.4 million scf/d) of gas and 11.13 kL/d (460 bbl/d) of 46° API condensate. The appraisal wells, Thomas Bright 1 drilled in March 2003 and Thomas Bright 2 drilled in late 2004 confirmed economic viability of the field.

The field development consists of an unmanned, six-slot wellhead platform, 3 production wells, and a single three-phase 18 inch diameter 55 km long pipeline linking the wellhead platform to the Varanus Island gas treatment facilities. In the Varanus Island facilities condensate is removed from the gas and stored and the raw gas is processed into sales quality gas and sent to mainland Western Australia via two 100 km long sales gas pipelines which connect into the Dampier–Bunbury and Goldfields Gas Transmission trunklines. The existing Varanus Island facilities were upgraded by the end of 2005 increasing the gas processing capacity to approximately 6.8 million m³/d (240 million scf/d).

Perseus

In December 2004 Woodside's "Perseus over Goodwyn" project (PoG) received final investment approval. The project's first phase comprises three subsea wells tied back to the Goodwyn-A platform via a 16 inch diameter pipeline. The wells will be drilled in the southern and western parts of the Perseus field, to drain reservoir layers not directly drained by the Perseus wells drilled from the North Rankin A platform. Current plans also incorporate development of the liquids rich Searipple reservoir by one Searipple

sub-sea well tied back to Goodwyn-A platform via the Perseus subsea pipeline. The PoG project is scheduled for start-up in the first quarter of 2007.

The Perseus field has an expected remaining life in excess of 30 years, based on current production forecasts and field expectation volumes. The field lies within the graben between the Goodwyn and North Rankin horsts. The field was first penetrated in 1972 by the North Rankin 4 well but was considered uneconomic because of the poor reservoir quality encountered in the well and the limited extent of the mapped closure. Following the acquisition of 3D seismic data over the field in 1983, and the subsequent reprocessing of data in 1987, a small pinch out closure was mapped on a structural nose plunging to the northwest of the North Rankin 4 well. The closure was tested in 1991 by the deviated appraisal well North Rankin A22 drilled from the North Rankin platform. The well encountered a gross gas column of 144 metres in excellent quality reservoir and has been producing since completion through the North Rankin facilities.

During the early phase of production from this well it was observed that the pressure decline in the reservoir was less rapid than expected with such a small closure. This indicated much greater reservoir energy and therefore, potentially, a larger gas accumulation. The acquisition of regional 3D seismic data in 1992 served as a basis for a re-evaluation of the closure and identified the possibility of a much larger trap. This evaluation led to the drilling of exploration well Perseus 1 in 1995. This well confirmed the existence of a large trap.

Pluto

In December 2005 Woodside Energy Limited announced that it had signed a Heads of Agreement with Tokyo Gas for the supply of between 1.5 and 1.75 million tonnes of LNG per year, for 15 years, on an ex-ship basis from Woodside's 100% owned Pluto gas field in Western Australia. The agreement allows for an option to extend for a further 5 years, with deliveries starting from the end of 2010. The final sales and purchase agreement is expected to be negotiated by the end of 2006 and would be conditional on a final investment decision by mid-2007. The Heads of Agreement also provides for Tokyo Gas to purchase a 5% equity interest in the Pluto project. The Pluto project was referred for state and federal government environmental review and an application for major project facilitation was also lodged with the Australian Government.

The Pluto gas field is located some 190 km northwest of Karratha in permit WA-350-P, and was discovered in April 2005 by the Pluto 1 exploration well. The current development options for the Pluto LNG Project include an offshore production platform, 200 km long sub-sea pipeline to an onshore gas treatment plant, up to two LNG processing trains with an estimated capacity of between five and seven million tonnes per annum, LPG and condensate storage tanks, loading jetty and associated infrastructure. The field would be developed by at least six subsea wells which would be tied back to the offshore facility. Concept selection and refinement of development options will be done concurrently with field appraisal work. Woodside have assessed several plant sites and at this stage, the preferred onshore processing site is the Burrup Industrial Estate on the Burrup Peninsula, with processing facilities located near

Hearson Cove, and storage and loading facilities located at nearby Holden Point. Alternative sites at Onslow, West Intercourse Island and Cape Preston will also be assessed. The Western Australian Department of Industry and Resources has reserved land for the Pluto development within the Burrup Industrial Estate near Karratha.

Stybarrow

In November 2005 BHP Billiton and Woodside Energy approved the \$814 million development of the Stybarrow oil field. The Stybarrow oil field is located 56 km northwest of Exmouth offshore Western Australia with the Eskdale oil and gas field another 12 km further northwest in the Exmouth Sub-basin of the Carnarvon Basin. The field is in exploration permit WA-255-P (2) in 825 m of water. Stybarrow will be Australia's deepest water oil development. The field was discovered in February 2003. The Stybarrow field and the adjacent small oil rim of the Eskdale field are estimated to contain recoverable oil reserves of between 9.5 and 14.3 GL (60 and 90 million bbl) of oil. The development proposal consists of the following components:

- Seven subsea wells (4 horizontal producers, 3 deviated water injectors) for the production of hydrocarbons from the Stybarrow field, one horizontal subsea well for the production of hydrocarbons from the Eskdale field and one deviated subsea well for the injection of excess gas into the crest of the Eskdale field.
- Flowlines from the subsea wells to a FPSO.
- Control umbilicals from the FPSO to a subsea distribution unit and from the distribution unit to the wells.
- The FPSO will be anchored at the field by a disconnectable mooring system.
- The FPSO will be a double-hull vessel with a topsides plant capable of processing 12,700 kL/d (80 kbbl/d) of oil.
- Produced water will be re-injected into the Stybarrow field.

The first oil is expected in early 2008 and the field life is estimated at 20 years. The plateau production rate is forecast at 12,700 kL/d (80,000 bbl/d).

Vincent

In December 2005 Woodside provided advance notice to the Government of the WA-28-L Joint Venture's plan for submission of the preliminary Vincent Field Development Plan. Vincent is covered by the Enfield Production Licence (WA-28-L). Several development options are being assessed, with the environmental approvals processes for Vincent triggered in May 2005. The Joint Venture final investment decision is expected in March 2006. The current plan for first oil production from the Vincent discovery is in 2008.

The Vincent oil field is located approximately 5 km northeast of the Enfield field in offshore Carnarvon Basin in 370 metres water depth. The field was discovered in December 1998. The discovery well penetrated a 12 to 19 metres thick oil rim in the Lower Barrow Group. The oil is heavily biodegraded sour oil with an API of 17°.

4.7 Perth Basin

Cliff Head

The Cliff Head oil field development is in progress and the first production is expected in the first quarter of 2006 at initial production oil rates of 2,500 kL/d to 3,800 kL/d (16 kbbbl/d to 24 kbbbl/d). In October 2005 the *Ensco 67* jackup rig arrived on location and started Cliff Head drilling and completion program of 6 production wells and 2 water injection wells. The drilling program was completed in December 2005. The rig will be also used to install the production jacket and topside facilities. The Cliff Head pipelines, power cable and umbilical were successfully completed on 15 November 2005. Construction and pre-commissioning of the topsides for the Cliff Head 'A' platform was completed in Malaysia and was installed early 2006. In January 2006 the construction of the onshore production facilities was 85% completed.

The Cliff Head development includes an unmanned offshore production platform tied back to an onshore processing facility, where power generation, processing, storage and water injection facilities will be located. Export will be via truck to the BP Kwinana refinery or by truck to Geraldton for shipping.

The Cliff Head oil field was discovered at the end of 2001 in the offshore Perth Basin permit WA-286-P. The field is situated approximately 11 km off the Western Australian coastline in 16 metres of water. The Cliff Head 1 well commenced drilling on 25 December 2001 and discovered a 5 metre oil column in the primary objective Permian reservoir. The field was successfully appraised by three wells. On two appraisal wells the reservoir was cored and on one well a production test was conducted that flowed at stabilised rates up to 480 kL/d (3 kbbbl/d) using an electrical submersible pump.

5: Coalbed methane

5.1 Introduction

Coalbed methane (CBM) is the naturally occurring methane-rich gas in coal seams, but its nomenclature is somewhat confusing in Australia. Coalbed methane is commonly known as coal seam gas (CSG) in Queensland and as coal seam methane (CSM) in New South Wales, South Australia and Western Australia. The coalbed methane that is associated with coalmining operations is traditionally called coalmine methane (CMM). The coalmine methane that is emitted to the atmosphere through mine ventilation systems is called ventilation air methane (VAM). In this volume CBM will be used.

The following conversion factor is used universally to convert a coalbed methane volume to an energy value, when a real specific conversion factor is not available: 1 million standard cubic feet (MMscf) = 1.05 TJ; or 1 billion standard cubic feet (Bcf) = 1.05 PJ. In previous editions, however, the following conversion factor was used universally: 1 MMscf = 1.1 TJ; or 1 Bcf = 1.1 PJ, but no backward conversion adjustment has been attempted.

5.2 Coalbed methane policy development

Coalmine methane drainage and standalone coalbed methane exploration and production are separately administered in Queensland and New South Wales: drainage operations by mineral resources legislation and standalone coalbed methane exploration and production by petroleum resources legislation. In Victoria, standalone coalbed methane exploration and production are also administered under the legislation for mineral resources development. As coalbed methane is contained within coal seams, conflicts between the production of coal and coalmine methane and the production of coalbed methane can occur in an area where the coalbed methane resource is located within a potentially economically minable coal deposit.

The Queensland government has introduced a new coalbed methane regime through the *Petroleum and Gas (Production and Safety) Act 2004* and *Petroleum and Other Legislation Amendment Act 2004*, which were passed in September 2004 and received assent in October 2004, replacing the *Petroleum Act 1923*. However, the old *Petroleum Act 1923* is being kept for about 25 Authorities To Prospect and almost all current Petroleum Leases, to preserve existing rights and to ensure that there is no disruption to the production of petroleum. The new legislation intends to provide a modern, efficient and flexible framework for the exploration and production of petroleum, including coalbed methane, and for the upstream pipeline industry.

The *Petroleum and Gas (Production and Safety) Act 2004* gives a definition of coalbed methane as follows: “coal seam gas is petroleum (in any state) occurring naturally in association with coal or oil shale, or in strata associated with coal or oil shale mining”. The new legislation implements the coal seam gas regime, which will enable coalbed methane and coal exploration and production to occur in the same area. The regime

is based on consultation and negotiation between the parties to reach commercial agreements about the coordinated development of the two different resources.

The new legislation requires Mining or Petroleum Lease applicants to provide development plans for approval. These plans must consider the interests of the other party, to optimise the safe and efficient production of both resources. The new regime intends to provide clear rules, rights and obligations for the petroleum, coalbed methane and coal industries. The coal industry can use any coalmine methane that is drained before, during or after coalmining operations for onsite energy. However, offsite sale of coalmine methane is now administered by the new petroleum legislation, with the exception of existing production projects.

The new legislation also intends to ensure that the coalbed methane industry should manage both potential groundwater impacts and beneficial re-use of the produced water. The *Mineral Resources Act 1989* was amended to incorporate the requirements of the coalbed methane regime.

In a separate but related policy development in Queensland, a new gas scheme came into effect in January 2005 and will operate for 15 years. Designed to encourage the development of new gas supply sources such as coalbed methane, the scheme requires electricity retailers to source at least 13% of their electricity sold in Queensland from gas-fired generation or renewable resources. The scheme aims to diversify energy mix towards the greater use of gas, to assist in encouraging the development of new gas sources and infrastructure in Queensland and to reduce greenhouse gas emissions from the electricity sector. The scheme is being implemented through the *Electricity Amendment Act 2004*, which was enacted in November 2004 to amend the *Electricity Act 1994*. The 13% gas scheme has already acted as a catalyst for active exploration and development programs for coalbed methane.

5.3 Coalbed methane exploration and drilling activity

The capital cost of drilling a coalbed methane well has decreased greatly in the last decade, with fit-for-purpose drilling technologies tried and developed on site in Australia. Some new production wells comprise pairs of a horizontal drainage well and a directly connecting vertical production well or trios of two horizontal wells and a vertical well.

Table 5.1 contains a statistical summary of wells drilled for stand-alone coalbed methane exploration or development but does not list coalmine methane drainage wells. Coalbed methane drilling activity has been increasing substantially, and 277 coalbed methane exploration or development wells were drilled in 2004. In comparison, 209 conventional petroleum exploration or development wells were drilled onshore or offshore in Australia in the same period.

A total of 300,000 m of directional in-seam drilling is carried out every year for degasification purposes, to enhance mine-site safety at underground and highwall open-cut collieries in the Bowen Basin in Queensland and the Sydney Basin in New South Wales. In comparison, about 184,000 m were drilled for stand-alone coalbed methane exploration or production in 2004 in Australia.

Table 5.1 Coalbed methane wells drilled 2000-2004

State	Basin	Coal type	No. of coalbed methane wells				
			Year				
			2000	2001	2002	2003	2004
Queensland			39	87	99	127	249
	Bowen	high rank	30	57	67	108	222
	Clarence-Moreton	low rank	2		2	1	1
	Cooper	high rank			1		
	Galilee	high rank	4				
	Nagoorin	low rank					1
	Surat	low rank	3	30	29	18	25
NSW			11	9	16	12	28
	Clarence-Moreton	low rank		5			
	Gloucester	high rank					3
	Gunnedah	high rank	3	1	2		6
	Murray	lignite				1	
	Sydney	high rank	8	3	14	11	19
Victoria				4	2	3	
	Otway	lignite		4	2	3	
Total			50	100	117	142	277

Coalmine methane drainage wells that are administered under coal mining legislations are not counted. The data have been compiled from information provided by State governments or available at the websites of various companies. Some data entries are provisional.

A recent trend in coalbed methane exploration is for resources at shallow depths in low-rank (low thermal maturity) coal seams of Jurassic age in the Surat Basin in Queensland and in the Clarence–Moreton Basin in Queensland and New South Wales. Wells are typically about 500 m deep in the Surat Basin. This new trend is based on the observation that, in spite of a smaller amount of coalbed methane initially-in-place per unit volume of coal, low-rank coal at shallow depths (100 to 600 m) is more permeable than high-rank coal of Permian age at intermediate depths. Thus, coalbed methane could be more easily desorbed from low-rank coal than from high-rank coal, resulting in a higher recovery factor. Lignite (brown coal) of Paleogene age has also become a target for coalbed methane exploration.

The Bowen Basin remains the most actively explored and developed basin in Australia for coalbed methane. The basin's share of coalbed methane drilling activity exceeded 80 % of Australia's total in 2004.

Drilling operations in the Surat Basin were active for proving up reserves in 2004. Target coal seams are of low-rank and occur at shallow depth within the Walloon Coal Measures of Jurassic age. The Walloon Coal Measures fairway, which is a prospective region delineated geologically for coalbed methane exploration, occurs near existing gas pipelines.

Exploration drilling activities in Queensland extend from the Bowen and Surat Basins, where several advanced-stage exploration projects exist, to coastal basins such as the Clarence-Morton and Nagoorin Basins.

In New South Wales, much of coalbed methane drilling activity in 2004 was carried out for commercial development of the Camden project in the Sydney Basin. In addition, pilot production projects began in the Gunnedah and Gloucester Basins in 2004 and in the Clarence-Moreton Basin in 2005.

In Victoria, a dual purpose exploration well (Megascolides-1) was drilled in the Gippsland Basin in 2004 under both a Petroleum Exploration Permit and a Minerals Exploration Licence. The well targeted coalbed methane at shallower depths and oil at deeper depths. For statistical purposes, however, this well will not be counted as a coalbed methane exploration well.

A 9 month production test commenced at the Oak Park coalbed methane pilot production site, 45 km west of Melbourne, in January 2005. The aim of the test is to establish the viability of biogenic coalbed methane production from the brown coal of Paleogene age that occurs extensively at shallow depths. Biogenic coalbed methane was formed through natural bacterial activity associated with meteoric water recharge in thermally immature coals.

The bulk of the onshore Otway Basin in Victoria is now covered by Minerals Exploration Licences or Exploration Licence Applications for coalbed methane exploration. A drilling campaign for coalbed methane exploration will begin in late 2005.

In South Australia, 13 Petroleum Exploration Licence Applications are under consideration for exploration rights for coalbed methane or *in-situ* gasification over coal deposits. Granting of these licences has been delayed pending resolution of issues of conflicting rights with coal leases. Coal deposits in South Australia range in age from Tertiary to Permian and contain low to high-rank coals.

In Western Australia, several Special Prospecting Authorities and a Drilling Reservation were granted in 2004 for coalbed methane exploration in the Perth Basin. Target coal seams exist within the Sue Coal Measures of Permian age in the Vasse region, 280 km southwest of Perth. An exploration campaign for drilling 5 wells started in June 2005, and Adina-1 became the first coalbed methane exploration well in Western Australia.

Table 5.2 contains a list of operators of coalbed methane exploration or development wells. Of the 277 wells drilled in 2004, 241 were drilled by four operators. The Oil Company of Australia (OCA) was the most active operator in the early 2000s but was taken over by Origin Energy. The majority ownership of the Fairview field, which contains the largest coalbed methane reserves in Australia, will change from Tipperary to Santos. The operatorship of the Camden field will change from Sydney Gas to Australian Gas Light.

Table 5.2 Operators of coalbed methane wells

Operator	Year				
	2000	2001	2002	2003	2004
Australian CBM	1	3		1	1
Amadeus	2				
Apex					1
Arrow		3	15	10	18
BNG	2				
CH4 Gas	2	10	11	46	156
Comet Ridge					1
Eastern Star Gas		4	2	3	4
Forcenergy	2	1			
Galilee Energy	4				
Lucas					3
Molopo		1			
OCA	16	24	32	29	
Origin					49
Queensland Gas	3	24	15	8	9
Samson				1	1
Santos	2	10	1	4	7
Strike Oil			2		
Sunoco		4			
Sunshine Gas					3
Sydney Gas	6	3	14	11	18
Tipperary	3	1	22	29	6
Tri-Star Petroleum	7	12	3		
Total	50	100	117	142	277

Coalmine methane drainage wells that are administered under coal mining legislations are not counted.

5.4 Coalbed methane production and reserves

Gas produced from stand-alone coalbed methane wells drilled in Australia is generally very pure (>95% methane) and requires minimal processing. However, as a coalbed methane well is less productive than a conventional gas well, a large number of wells are required to develop a coalbed methane field. The production wells are so inflexible that the gas flow rate can not be controlled as easily as conventional gas wells. Coalbed methane wells require continuous dewatering to release gas. Production is as much a water management exercise as it is a coalbed methane production exercise. In addition, gas compression to pipeline specifications adds significantly to operating costs.

The commercial production of coalbed methane (including coalmine methane utilisation) has increased substantially since 1996, when coalmine methane utilisation began in the Moura colliery in Queensland. Production is estimated to have reached 45 PJ/y in 2004 in Australia (Table 5.3). Cumulative coalbed methane production from 1996 to 2004 was about 179 PJ. Coalbed methane now accounts for about 4% of Australia's total primary and domestic natural gas consumption.

Table 5.3 Coalbed methane production

Year	Queensland				NSW				Total (Australia)			
	PJ/y	Bcf/y	TJ/d	MMcf/d	PJ/y	Bcf/y	TJ/d	MMcf/d	PJ/y	Bcf/y	TJ/d	MMcf/d
1996	2	2	5	5	0	0	0	0	2	2	5	5
1997	2	2	5	5	3	3	8	8	5	5	14	13
1998	3	3	8	8	6	5	15	14	9	8	23	22
1999	5	5	14	13	6	6	16	16	11	10	30	29
2000	6	6	16	16	7	6	18	17	13	12	34	33
2001	13	12	36	34	8	7	21	20	21	20	56	53
2002	25	24	68	65	9	8	23	22	34	32	92	87
2003	31	30	85	81	9	9	25	23	40	38	110	104
2004	35	33	96	91	10	9	26	25	45	42	122	116
Total	122	116			56	53			178	169		

Conversion factor used: 1 Bcf = 1.05 PJ. Coalmine methane utilisation is included.

In Queensland, coalbed methane production was about 35 PJ in 2004, satisfying about 30% of Queensland's total primary gas demand. Coalbed methane is produced commercially at several collieries and coalbed methane fields in the Bowen and Surat Basins. The produced gas is connected to the State-wide pipeline network. Production is mainly from high-rank coal seams in the Baralaba Coal Measures of Late Permian age in the Bowen Basin.

The most notable activity in Queensland in 2004 was the commissioning of the Moranbah project, from which a dedicated 391 km pipeline had been constructed in early 2004 to supply Townsville with coalbed methane. A total of 156 wells were drilled for this project and in its adjoining exploration permit areas in 2004. Most of the Moranbah development wells comprise trios of two horizontal drainage wells and a directly connecting vertical production well. Drilling technology applied to this project is based on a combination of underground coalmine methane drainage techniques, and directional drilling technologies used in the civil engineering industry.

Elsewhere in Queensland, coalbed methane production expansion projects started at Fairview and Scotia. Infrastructure for coalmine methane production is being upgraded at the Moura colliery, and commercial coalbed methane production began at Mungi in 2004 and Spring Gully in 2005. Kogan North had its first sale of gas in early 2006.

Coalbed methane production in New South Wales was about 10 PJ in 2004. Much of this came from coalmine methane utilisation at the Appin and West Cliff collieries.

The percentage of the discovered coalbed methane initially-in-place that can be considered as recoverable to surface above a certain cut-off flow rate per well for a certain minimum period with the use of existing or emerging technology is not well understood. It is not uncommon for coalbed methane operators in Australia to assume recovery factors of between 15 and 70 %.

Table 5.4 lists information on coalbed methane reserves (as of September 2005), production rates and supply contractual volumes for individual projects. A total of 3,477 PJ (3,300 billion cubic feet or 94 billion cubic metres) of proved plus probable

Table 5.4 Coalbed methane production, reserves and supply contracts

Project	Operator	Basin	Production				Contract					
			Start up	PJ/y	As of	2P reserves	Supply with	Total	Start-up	Period	For	
			Year	PJ/y	Year	PJ		PJ	Year	Years		
Moura *	Anglo Coal	Bowen	1996	5.5	2005		Energex	40	2003	10	Pipeline	
Dawson Valley	Anglo Coal	Bowen	1996	3.0	2002	54						
Appin & Westcliff *	Energy Dev'tments	Sydney	1997	7.5	2003							
Fairview	Santos	Bowen	1998	13.9	2005	1,098	Energex		2000	7	Pipeline	
							Orica	16	2006	10	Chemical	
							?	6	2005	2	?	
Peat	Origin	Bowen	2000	6.0	2003	31	BP		2001	20	Refinery	
Tahmoor *	Envirogen	Sydney	2001	0.5	2003							
Camden	Sydney Gas	Sydney	2001	3.5	2005	67	AGL	145	2005	10	Pipeline	
Scotia	Santos	Bowen	2002	8.7	2005		CS Energy	120	2002	15	Powergen	
Mungi	Anglo Coal	Bowen	2004	1.1	2005	25	Origin from Molopo		?	2004	?	Pipeline
							Ergon	53	2006	15	Powergen	
Teralba *	Envirogen	Sydney	2004									
Moranbah	CH4 Gas	Bowen	2004	14.6	2005	382	Ergon	18	2004	15	Powergen	
							Enertrade	290	2005	15	Pipeline	
Spring Gully	Origin	Bowen	2005			696	AGL	195	2005	15	Pipeline	
							QAL	180	2006	15	Alumina	
							Incitec (Origin)	70	2007	10	Chemical	
									2008		Powergen	
Kogan North	Arrow	Surat	2005			83	CS Energy	60	2005	15	Powergen	
German Creek *	Energy Dev'tments	Bowen	2006								Powergen	
Berwyndale South	Queensland Gas	Surat	2006			186	CS Energy (QGC)	40	2006	10	Pipeline	
								?	2007	?	Powergen	
Bellambi *	Envirogen	Sydney	2006									
Tipton West	Arrow	Surat	2006			124	ERM Power	90	2006	15	Powergen	
							Ergon	48	2006	15	Powergen	
							BP Bulwer	15	2006	5	Refinery	
Daandine	Arrow	Surat	2006				Alinta	22	2006	10	Powergen	
Mt Lindesay	Arrow	Clarence Moreton					AJ Bush		?	2005	5	Food process
Argyle & Lauren	Queensland Gas	Surat				284	Incitec Pivot	74	2007	10	Chemical	
Harcourt & Bindaree	Origin	Bowen				24						
Lilyvale & Oak Park	Origin	Bowen				247						
Grosvenor Downs	CH4 Gas	Bowen				72						
Peak Downs	CH4 Gas	Bowen				104						
Casino South	Metgasco	Clarence Morton					Northern Co-op Meat				Food process	
North Goonyella *	CH4 Gas	Bowen					Ergon				Powergen	
Endeavour & Munmorah *	Powercoal	Sydney										
Total				64.2		3,477		1,482				

Compilation: September 2005.

No adjustments have been attempted to subtract volumes produced since the reserves were originally reported.

*: Colliery or collieries.

coalbed methane reserves has been reported in coalbed methane fields and pilot production areas in Australia. Of these reserves, 2,733 and 677 PJ occur in the Bowen and Surat Basins respectively. These figures compare with the total cumulative production (753 PJ) and proved plus probable reserves (259 PJ) of conventional natural gas in the two basins combined. This shows that coalbed methane reserves are more than three times as large as the ultimate recovery of conventional natural gas in these basins.

New gas supply contracts in Queensland have shifted to coalbed methane due to the decline in conventional natural gas reserves in the Cooper, Bowen and Surat Basins. In recent years, a large number of supply contracts have been exchanged to sell more than 1,482 PJ of coalbed methane to the operators of pipelines, electric power generators, refineries and manufacturing plants in Queensland and New South Wales (Table 1). This means that 43 % of the total proved plus probable reserves (3,477 PJ) have already been allocated for supply contracts.

6: Current production

6.1 Crude oil and condensate production in 2004

Crude oil and condensate production in 2004 was 31.6 GL or 86.5 ML/d (544,000 barrels per day). Crude oil production data include all production from the JPDA with Timor-Leste in the Bonaparte Basin, of which Australia's share is 10% of production.

The 2004 production shows a decline of 4.2% compared with the figure of 33.0 GL or 90.3 ML/d (567,000 barrels per day) for 2003.

Crude oil production by basin is listed in Appendix I. Production relative to reserves is shown in Figure 2.2.

6.2 Gas production in 2004

Gas production in 2004, inclusive of on-site fuel use and flaring, was 39.6 billion cubic metres or 108.6 million cubic metres per day (3.8 billion cubic feet per day).

The 2004 production shows an increase of 9.4% compared with the amended figure of 36.2 billion cubic metres or 99.2 million cubic metres per day (3.5 billion cubic feet per day) for 2003.

Annual gas production by basin is listed in Appendix I.

7: Crude oil and condensate forecasts

7.1 Crude oil and condensate forecast for 2005–2025

The forecast of production given in this chapter is based on current estimates of production from identified and undiscovered resources. Geoscience Australia estimates are provided at various probability levels to reflect the uncertainty surrounding the development of discovered accumulations (e.g. a production estimate at the 90% probability level means that there is a 90% chance of production being at least as high as the figure shown).

The figures for production from identified resources incorporate estimates of production from individual developed fields as well as estimates of reserves and timing of development of identified but undeveloped fields. The major factors affecting the accuracy of oil production estimates for identified fields are reserves growth in offshore fields and delays in the startup and interruptions to production from offshore fields. As a result the lower probability levels reflect the scope for increases in the reserves estimates on which the forecasts are based.

The accuracy of the production estimates is also dependent on the timing of future gas developments with their associated condensate production. In some cases, the cycling of dry gas allows accelerated production of condensate.

Figure 7.1 shows the production of crude oil and condensate from 1975 to 2004 and Figure 7.1 and Table 7.1 show forecast production from 2005 to 2025. The forecast includes production of crude oil and condensate from accumulations that had been discovered by the end of June 2005, plus production of crude oil and condensate from undiscovered accumulations. The 2005 forecast includes 10% of production from the Joint Petroleum Development Area (JPDA).

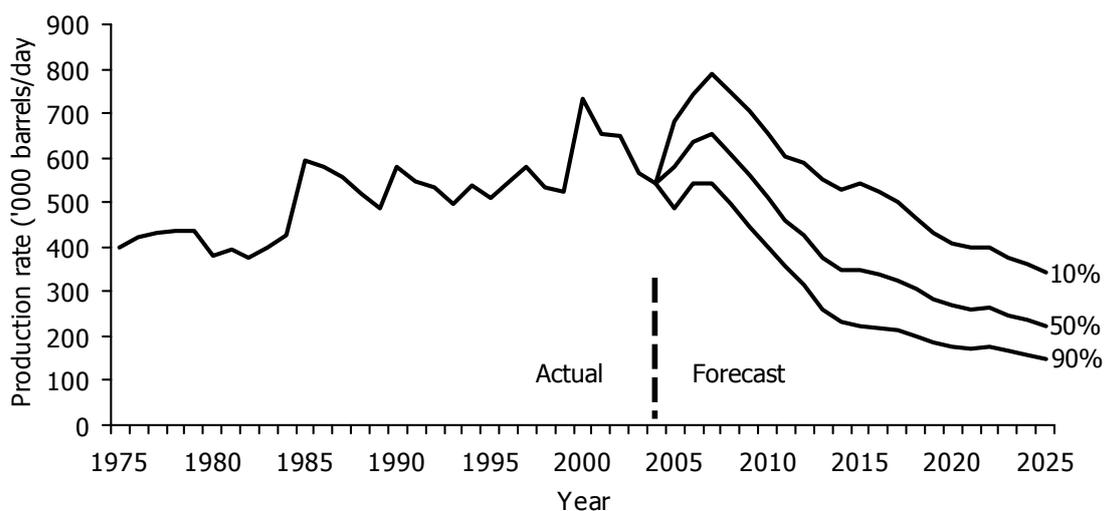


Figure 7.1 Australia's annual production of crude oil and condensate 1975-2004 and forecast annual production at 90%, 50% and 10% cumulative probability 2005-2025

Table 7.1 Forecast for 2005-2025 of crude oil and condensate production from Australia's identified accumulations, and crude oil production from undiscovered accumulations in the Bonaparte, Carnarvon, Eromanga, Cooper, Gippsland, Browse, Bass, offshore Otway and offshore Perth Basins, as at July 2005 (thousands of barrels per day)

Year	Identified			Undiscovered			Both		
	P90	P50	P10	P90	P50	P10	P90	P50	P10
2005	489	568	682	0	1	1	489	578	682
2006	542	617	740	0	1	2	544	635	741
2007	538	628	785	0	2	7	541	653	790
2008	488	589	736	1	3	17	495	608	745
2009	437	551	689	1	5	31	447	561	706
2010	386	501	627	2	11	47	400	510	654
2011	338	448	561	3	20	69	358	461	603
2012	287	402	537	6	30	86	315	428	590
2013	226	336	486	10	40	105	262	378	550
2014	187	295	452	14	50	124	231	349	531
2015	174	285	452	19	59	138	225	349	541
2016	158	261	423	25	71	153	217	337	526
2017	146	239	389	31	79	164	213	325	499
2018	129	212	345	35	85	172	199	304	466
2019	112	184	300	39	93	182	185	281	433
2020	102	167	272	43	98	187	177	269	409
2021	95	156	255	46	103	193	173	262	400
2022	94	153	250	49	106	195	174	263	398
2023	84	137	224	50	110	199	165	248	377
2024	77	126	205	52	112	200	157	237	363
2025	68	112	182	52	113	200	148	224	342

7.2 Crude oil forecast for 2005–2025

Figure 7.2 shows crude oil production from 1975 to 2004 and Figure 7.2 and Table 7.2 show a forecast of crude oil production from 2005 to 2025. The forecast is based partly on Geoscience Australia and company estimates of crude oil production from accumulations that had been discovered by end of June 2005 (identified accumulations), and partly on estimates of crude oil production from undiscovered accumulations. The forecast includes 10% of production from the JPDA.

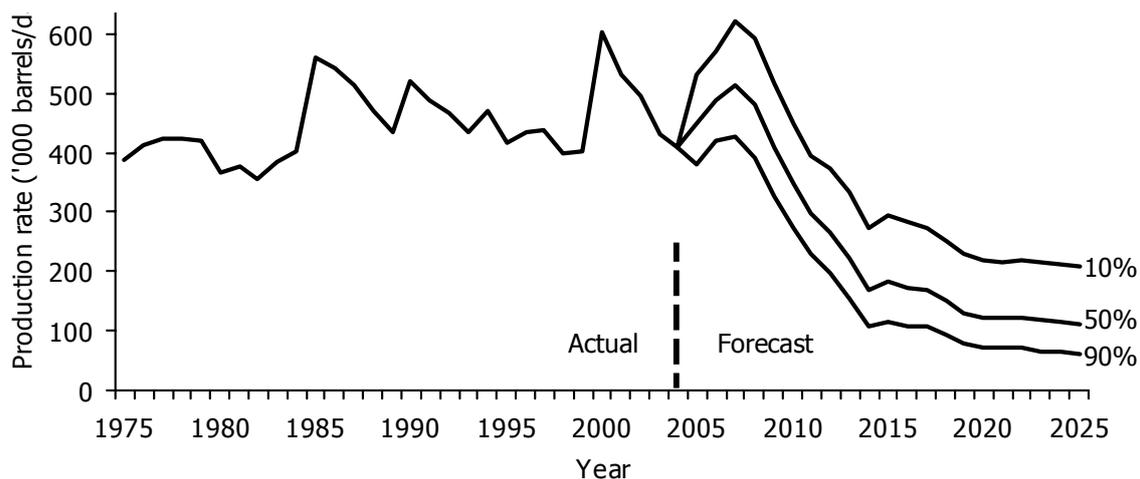


Figure 7.2 Australia's annual production of crude oil 1975-2004 and forecast annual production at 90%, 50% and 10% cumulative probability 2005-2025

Table 7.2 Forecast for 2005-2025 of crude oil production from Australia's identified accumulations, and from undiscovered accumulations, in the Bonaparte, Carnarvon, Eromanga, Cooper, Gippsland, Browse, Bass, offshore Otway and offshore Perth Basins, as at July 2005 (thousands of barrels per day)

Year	Identified			Undiscovered			Both		
	P90	P50	P10	P90	P50	P10	P90	P50	P10
2005	380	442	530	0	1	1	380	450	532
2006	417	475	570	0	1	2	419	489	571
2007	423	494	617	0	2	7	426	514	621
2008	385	465	581	1	3	17	391	481	592
2009	317	400	500	1	5	31	326	410	517
2010	259	337	421	2	11	47	273	349	450
2011	211	279	350	3	20	69	228	297	395
2012	171	239	319	6	30	86	199	267	375
2013	122	182	263	10	40	105	153	223	335
2014	76	119	183	14	50	124	109	169	273
2015	74	121	192	19	59	138	116	183	294
2016	62	102	166	25	71	153	109	173	284
2017	54	89	145	31	79	164	107	169	273
2018	41	67	109	35	85	172	95	151	252
2019	26	43	69	39	93	182	80	131	230
2020	17	29	47	43	98	187	72	121	219
2021	15	25	40	46	103	193	71	121	217
2022	13	21	34	49	106	195	71	121	220
2023	9	16	25	50	110	199	66	117	215
2024	7	12	20	52	112	200	64	115	212
2025	6	10	16	52	113	200	62	113	210

7.3 Condensate forecast for 2005–2025

Figure 7.3 shows production of condensate from 1975 to 2004 and Figure 7.3 and Table 7.3 show a forecast of condensate production from 2005 to 2025. The forecast is based on company and Geoscience Australia estimates of production from accumulations that had been discovered by June 2005 and for which some production planning has been carried out. The forecast includes 10% of production from the JPDA.

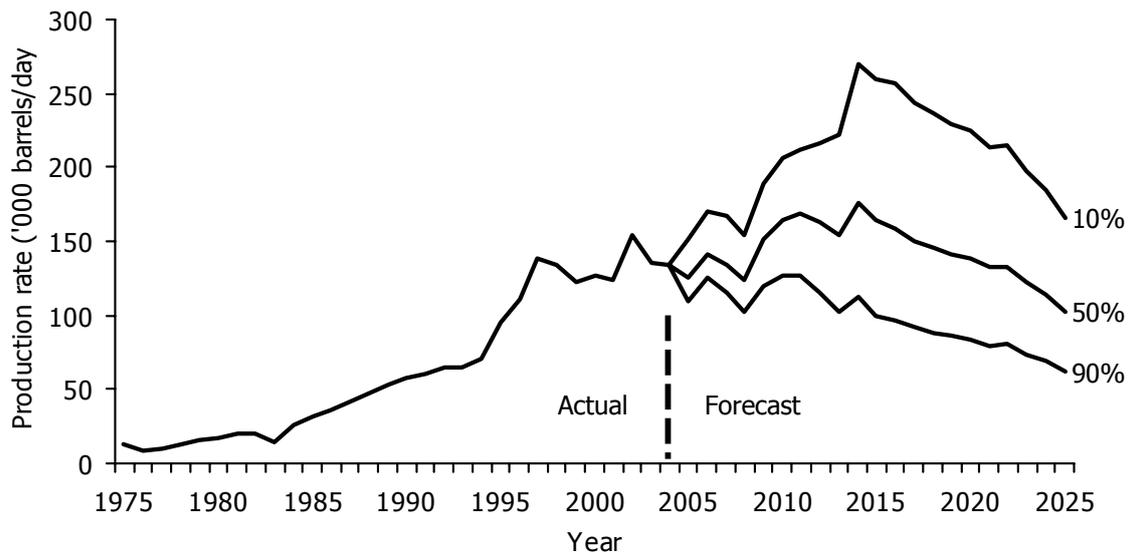


Figure 7.3 Australia's annual production of condensate 1975-2004 and forecast annual production at 90%, 50% and 10% cumulative probability 2005-2025

Table 7.3 Forecast for 2005-2025 of condensate production from Australia's identified accumulations, as at July 2005 (thousands of barrels per day)

Year	Identified		
	P90	P50	P10
2005	109	126	152
2006	125	142	170
2007	115	134	168
2008	103	124	155
2009	120	151	189
2010	127	165	206
2011	127	169	212
2012	116	163	217
2013	103	154	222
2014	112	176	269
2015	100	164	260
2016	96	159	257
2017	92	150	244
2018	88	145	236
2019	86	141	230
2020	84	138	225
2021	80	132	214
2022	81	132	215
2023	74	122	198
2024	69	114	185
2025	62	102	166

8: Sufficiency of crude oil and condensate resources

8.1 Introduction

This chapter discusses the quantity of Australia's petroleum resources, the amounts that have already been produced and the sufficiency of the amounts that remain for future consumption. Sufficiency refers to the amounts of discovered and undiscovered resources relative to current and future extraction rates. The word "sufficiency" is used rather than "sustainability", since petroleum resources are consumed much faster than they are generated, and the production of petroleum is not strictly sustainable.

Since the 1960s, when oil and gas were first produced, petroleum has played an increasingly important part in Australia's economy. Nevertheless, Australia's resources of crude oil are limited.

Australian production of natural gas meets domestic consumption. Significant additional amounts are exported. There are prospects for significantly increased production for both domestic and export markets. Condensate resources are substantial but will only be brought into production when gas developments proceed.

8.2 Ratio of economic demonstrated resources to annual production

Australia's remaining economic demonstrated resources of petroleum, as estimated at the end of each year, and the production for that year, are set out in Table 8.1. The ratios of economic demonstrated resources to production are shown in Figure 8.1.

The resources to production ratio (R/P) indicates how many years of production the resource would support assuming present production rates could be maintained (Figure 8.1). For example, the ratio for crude oil indicates an estimated "life" which has remained fairly steady at about 10 years since 1982 but is currently seven years. This has decreased rapidly since 2000. Natural gas has a current "life" estimated at 65 years, but past estimates have been as low as 39 years (in 1993) and as high as 76 years (in 2001). These estimates include all resources and production in the JPDA with Timor-Leste.

The fairly constant R/P ratio of about 10 years for crude oil over 1983-1999 shows that economic demonstrated resource to production ratios cannot be relied on as an indicator of resource life. The estimated life did not reduce year by year (despite considerable production), because estimates of remaining economic demonstrated resources stayed at a near constant level, mainly as a result of revisions (additions) to the estimates of the demonstrated resources within the producing fields, and partly as a result of new discoveries (while the rate of production remained steady). The rapid recent decrease in R/P ratio recently is due to record production levels while resource additions have been small.

The average crude oil and condensate production from 1995 to 2004 was 33.4 GL per year, while remaining economic demonstrated resources in 2004 were 458 GL. This means that in 2004 average crude oil and condensate production could be sustained for 14 years.

A better indicator of sustainability might be the ratio of crude oil and condensate production to consumption. The consumption figures are projected by the Australian Bureau of Agricultural Resource Economics (ABARE, 2004). The ratios of forecast crude oil and condensate production to consumption from 2005 to 2019 are given in Table 8.2. It can be seen that the capability of domestic crude oil and condensate production at the median probability level to sustain consumption increase, from 69% in 2005 to 76% in 2006 and then decreases steadily to 27% in 2019. The forecast consumption of crude oil and condensate in 2005 of 46.9 GL could be sustained by remaining economic demonstrated resources at end of 2004 of 458 GL for 9.8 years, up from 9.3 years for the corresponding data from the previous year.

Table 8.1 Australia's economic demonstrated resources and production of crude oil, condensate, naturally-occurring LPG and natural gas 1982 to 2004 (gigalitres and billions of cubic metres).

End of Year	Crude oil			Condensate			LPG			Gas		
	EDR	Annual Production	R/P	EDR	Annual Production	R/P	EDR	Annual Production	R/P	EDR	Annual Production	R/P
1982	260	20.6	13	83	1.2	69	123	2.8	44	641	11.8	54
1983	235	22.3	11	74	0.8	93	87	3.3	26	629	9.0	70
1984	240	23.3	10	81	1.5	54	86	4.3	20	689	12.1	57
1985	217	32.5	7	86	1.8	48	88	4.9	18	709	13.3	53
1986	242	31.5	8	116	2.1	55	99	3.8	26	902	16.2	56
1987	246	29.8	8	119	2.9	41	97	4.7	21	1069	14.4	74
1988	255	27.4	9	122	2.8	44	130	4.5	29	1033	16.9	61
1989	260	25.1	10	119	3.1	38	114	3.7	31	955	18.9	51
1990	270	30.3	9	118	3.3	36	114	4.8	24	927	21.3	44
1991	258	28.3	9	124	3.5	35	131	4.3	30	950	22.1	43
1992	244	27.1	9	133	3.7	36	135	4.9	28	1006	24.1	42
1993	249	25.1	10	136	3.7	37	133	5.1	26	992	25.5	39
1994	297	27.2	11	156	4.1	38	154	5.3	29	1292	31.4	41
1995	277	24.1	11	183	5.5	33	144	5.7	25	1264	29.6	43
1996	240	25.3	9	193	6.5	30	174	4.9	36	1360	30.1	45
1997	266	25.5	10	192	8.1	24	184	5.1	36	1494	32.2	46
1998	243	23.2	10	273	7.8	35	243	7.1	34	1989	40.3	49
1999	215	23.3	9	277	7.1	39	262	5.8	45	1989	33.0	60
2000	194	35.1	6	300	7.4	41	292	5.6	52	2203	34.3	64
2001	206	30.7	7	289	7.5	39	293	5.6	52	2667	35.0	76
2002	176	28.8	6	277	9.0	31	274	6.1	45	2528	36.7	69
2003	186	25.1	7	247	7.9	31	210	7.1	30	2462	35.5	69
2004	157	23.8	7	301	7.8	39	214	5.9	36	2587	39.6	65

Table 8.2 Australia's production and demand for crude oil and condensate (thousands of barrels per day)

Year	Production	Consumption	Ratio
2005	562	809	69%
2006	623	820	76%
2007	608	836	73%
2008	516	852	61%
2009	509	871	58%
2010	462	891	52%
2011	425	909	47%
2012	393	926	42%
2013	346	945	37%
2014	326	964	34%
2015	337	983	34%
2016	328	1002	33%
2017	320	1022	31%
2018	302	1042	29%
2019	284	1062	27%
2020	273	1082	25%
2021	266	1103	24%
2022	267	1124	24%
2023	255	1145	22%
2024	247	1167	21%
2025	239	1189	20%

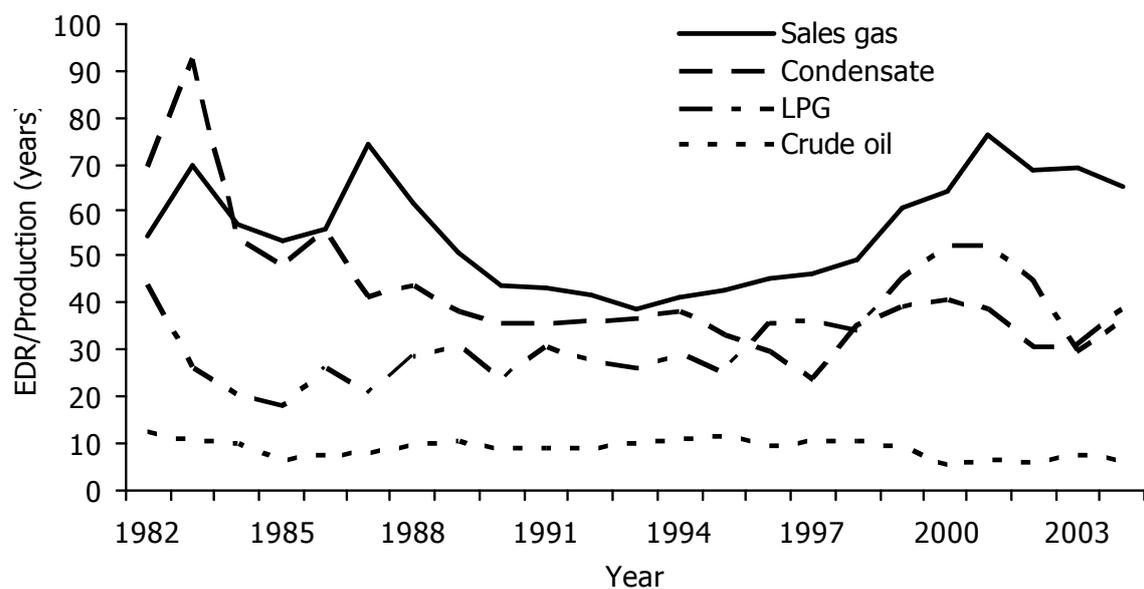


Figure 8.1 Annual R/P ratios for crude oil, condensate, LPG and sales gas

8.3 Trends in crude oil production

Crude oil production continues to decline, as evident above. Production profiles and the longevity of fields vary widely with the size of the field, the quality of the host reservoir and the means of development. The Barrow Island field is a giant field hosted in a poor quality reservoir with low recovery rates, but is accessible from land. It has produced consistently over a long period of time because of the ability to implement improved recovery practices relatively easily and economically. However, maintenance of and/or additional production depends on profitability, which in turn is related to the price of oil and the capacity for technological innovation.

In the past, the giant fields in the Gippsland Basin have underpinned Australian oil production. These fields have high-performing reservoirs and associated fixed infrastructure. Growth in reserves in these fields, plus the ability to economically tie-in small fields to the infrastructure, has meant that these assets have sustained production for a long period of time. Similarly, production of condensate from the large gas developments on the North West Shelf and Timor Sea is expected to have a relatively long life, but with very even production profiles reflecting constraints on the associated gas production. In the very long term, they will underpin the Australian production that the Bass Strait fields have traditionally supplied, but obviously not at the same level.

Production of oil from the Gippsland fields peaked in 1985 and has subsequently declined steadily. The industry has been successful in replacing this production by the development of the gas/condensate fields on the North West Shelf and with the discovery and development of many smaller oilfields on the north-west margin. In contrast to the Gippsland Basin oilfields, the remote and relatively small oilfields of the North West Shelf and Timor Sea have much shorter lives. They have been discovered and developed in a period of fluctuating oil prices and their location and size has required physical facilities with lower capital costs, constraining their flexibility for secondary developments in some cases. The year-by-year production performance of these developments has been harder to predict. However, it is evident that the recent rise in oil production is superimposed on a decline from a peak in production in the mid-1980s. While overall liquids production has increased due to the contribution from condensate, production in the longer term can only be sustained at current levels from new reserves in new oil fields, as the Laminaria-Corallina example clearly illustrates.

8.4 Estimated self-sufficiency

An indicator of resource sufficiency is percentage self-sufficiency, last published by the Department of Primary Industries and Energy (DPIE 1987). Self-sufficiency was defined as:

$$\text{Self - sufficiency} = \frac{\text{Crude oil and condensate production} + \text{domestic demand for naturally occurring LPG}}{\text{Net domestic demand for petroleum products}}$$

Since 1970, self-sufficiency has fluctuated between 60% and 90%, with levels above 70% since mid-1984. The indicator shows how well domestic production meets demand and is simple to understand. The 2002-2003 figure was 76% (ABARE 2004).

Heavy crude oil suitable for fuel oil, lubricant and bitumen production is imported and light crude oil is exported.

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9. New developments in geological sequestration of carbon dioxide

9.1 Carbon Dioxide (CO₂) Capture and Storage (CCS)

Carbon dioxide capture and storage involves the combined processes of capturing CO₂ from industrial processes such as power generation, transporting the CO₂ from the emission site to the storage site, and injecting it into geological reservoirs deep underground for long term storage. Once injected, the CO₂ will migrate away from the immediate vicinity of the injection point and will be trapped in geological formations. Geological storage of CO₂ prevents it entering the atmosphere where it would contribute to the potential for climate change caused by greenhouse gases.

The capture of CO₂ from a stationary source involves separating and purifying CO₂ from the bulk of the flue gas stream in which it would otherwise be released into the atmosphere. Following capture and separation, CO₂ is compressed to a supercritical phase which essentially means that it is as dense as a fluid but behaves in many ways like a gas. Compressing CO₂ to supercritical also enables the injection and storage of greater volumes than if the gas remained uncompressed.

Finally, the CO₂ is transported from the emission source to the injection site via a pipeline, where it is injected into a geological storage reservoir deep underground. It can also be transported by truck, rail or, in the case of a geological storage site deep beneath the seabed, by ocean tanker. The supercritical CO₂ must be injected into a suitable geological reservoir at least 800 metres below the surface where pressure and temperature conditions ensure that the gas remains in the supercritical state.

9.2 Site Assessment Methodology

Selection of an appropriate storage site is of paramount importance. In order to accurately evaluate a potential site in terms of its suitability for CO₂ storage, a comprehensive analysis of the detailed geological and geophysical characteristics of the site must be carried out, including injectivity, containment and capacity. Injectivity can be assessed through integrated core and petrophysical studies in order to characterise reservoir quality (i.e. porosity, permeability, thickness etc). Detailed sequence stratigraphic modelling also enables the estimation of the likely flow-unit geometries and connectivity of individual sand units. Containment is assessed through seal capacity analyses and by assessing the possible migration pathways and trapping mechanisms from the structural geometry and stratigraphic architecture in each individual potential storage site. Confirmation of containment potential can be achieved through the integration of the stratigraphic interpretation, the hydrodynamic analysis of formation water flow systems and geomechanical studies of fault stability and sustainable pore fluid pressures (Gibson-Poole et al., 2001).

For a geological sequestration option to be effective in reducing greenhouse gas emissions, it must be capable of storing volumes in excess of the size of large CO₂ rich

gas fields and the 20 year emissions from one coal-fired power plant (i.e. >1 trillion cubic feet). Storage capacity can be estimated from pore volume availability using 3D cellular models, which also provide the basis for the numerical flow simulations. The best storage sites will be at or close to CO₂ sources and existing infrastructure, thus reducing associated economic costs, and as near to 800 metres depth as possible to reduce stimulation and drilling costs. Injection of CO₂ into a geological formation must not compromise any existing natural resources that may be present in an area (e.g. oil and gas fields, fresh water aquifers).

Most knowledge of deep formations (> 800 metres) has arisen following hydrocarbon exploration and development. The total storage prospectivity of any basin encompasses three primary options; depleted oil and gas field storage, deep saline reservoirs and coalbed storage.

Oil and gas reservoir storage

Oil and gas reservoir storage may be possible in either depleted oil or gas fields or in association with enhanced oil recovery (EOR), a means to increase oil recovery. In this type of reservoir, geological traps such as anticlines or fault traps store the CO₂.

Depleted field storage capacity can be estimated by converting known hydrocarbon pore space (past production plus reserves) to CO₂ equivalent. This assumes that the reservoir can be returned to its pre-production pressure. Depleted field storage capacity can be estimated with greater certainty than other modes of geological storage. By applying the methodology of Holloway et al., (1996) hydrocarbon production and reserves volumes can be converted to stored CO₂ mass.

Deep sandstone and carbonate reservoirs

Storage in deep sandstone and carbonate reservoirs requires a fairly extensive reservoir formation with a corresponding top seal formation. In the case of deep saline formations with no distinct geological traps an impermeable top seal such as a claystone or evaporate above the storage reservoir is needed so that the buoyant CO₂ is contained by the groundwater flow; a process known as hydrodynamic trapping. This form of storage accommodates greater volumes of CO₂ compared with other trapping mechanisms. Over time, much of the CO₂ will dissolve into the groundwater and will be held permanently in solution. Some CO₂ will also be trapped during precipitation of new minerals as the CO₂ reacts with pre-existing minerals in the surrounding rock, precipitating out as new carbonate minerals in which the gas will be locked-up permanently, leaving only a small amount trapped as a supercritical fluid.

Coalbed Storage

Deep unmineable coalbeds represent another potential geologic storage option for CO₂ and in some instances will provide a value-added benefit of enhanced methane production. Coalbed methane (CBM) is a naturally occurring gas often found in coal seams and is growing increasingly important as an energy resource. Methane production from coalbeds can be enhanced by injecting CO₂ into coal formations, a process known as enhanced coalbed methane recovery (ECBM). Approximately two

to three molecules of CO₂ can be stored permanently in coals for each molecule of methane produced, depending on the rank of the coal. Unlike oil and gas reservoirs, the methane and CO₂ in coal seams is retained by adsorption rather than by trapping. The methane absorbed in the coal desorbs, diffuses, and flows with the water to the production wells in exchange for CO₂.

ECBM is an immature technology, and favourable geology and stress field are the key technical criteria for successful application. The coal seams must be saturated with gas, located at suitable depths and in simple structures, and have sufficient permeability. Other factors that impact production include the quality and concentration of the gas as well as porosity of the coal. Revenue from ECBM can offset the costs of CO₂ capture and transport (Gale & Freund, 2001).

9.3 The CO2CRC

Geoscience Australia is a core research participant in the Cooperative Research Centre for Greenhouse Gas Technologies (CO2CRC), which is Australia's major research organisation investigating CCS technologies. It integrates the work of 100 specialists from numerous scientific disciplines and eight separate research institutions. Funding is of the order of \$120 million, over seven years, and includes contributions from State and Federal governments and 12 major companies in the petroleum, coal, power, and other service providing industries. Furthermore, the CO2CRC draws on expertise from similar programs internationally, as well as providing expert advice to intergovernmental groups concerned with climate change.

Geoscience Australia is concerned with assessing sites for CO₂ storage around Australia. During 2004 and 2005, four multi-disciplinary teams investigated sites within the Perth, Otway, Sydney, Bowen, and Galilee basins for their suitability. Work focussed on compiling a database for each site that encompasses all available information pertaining to potential reservoirs, quality of seals, and details of emission sources. Major outputs of this work include:

- Comprehensive geological reports that build on existing knowledge of each of the basins in the context of sequestration suitability.
- Detailed geophysical mapping of 2D and 3D seismic data defining suitable reservoir and seal pairs and associated structural faulting.
- In some cases, three dimensional geocellular models have been created of the basins. Subsequent reservoir simulation is being carried out on these models to better predict the behaviour of CO₂ once it has been injected into a proposed site.
- Finally, all relevant spatial information held by Geoscience Australia, and other contributing agencies, has been assembled into Geographic Information Systems (GIS) for each basin allowing for the analysis of complex spatial relationships between sources, sites, and any risks.

Eastern Australian Basins

Significant progress that has been made includes the work done under the IAF program (Innovation Access Fora). Under a deed between the Commonwealth of Australia (DITR) and the Australian Coal Association, research was conducted on eastern Australian sedimentary basins focusing on South East Queensland and New South Wales. CO2CRC collaborative research activities were undertaken by Geoscience Australia, CSIRO Petroleum, and the Australian School of Petroleum.

The New South Wales study concluded that potential storage sites in both the Sydney and Gunnedah basins are poorly characterised due to limited exploration and thus had limited available data (Sayers et al., 2004). Where drill hole data did exist, it indicated reservoirs were of poor quality (low porosity/permeability and highly diagenetically altered) or were too shallow for supercritical CO₂. Urban development and national parks limit areas that are available for storage, and recent economic conventional gas discoveries within the deepest part of the Gunnedah Basin have further limited the basin's storage potential. The study concluded that many of the technical characteristics that are suitable for Coalbed Methane (CBM) production will also be attractive for CO₂ storage, and that existing CBM infrastructure will be of economic benefit.

The conclusions for South East Queensland, after the IAF investigation, indicated that some opportunities exist for small scale CO₂ injection. Pilot project scale storage potential is likely to be present both within depleted fields, CBM, and maybe more commercial scale opportunities in the Southern Bowen Basin, on the flank of the Wunger Ridge (work in progress).

The study also concluded that there are few, if any, locations immediately adjacent to power stations able to take more than 20 years of emissions. Alternatively, high storage volume certainly looks to be available in the Galilee Basin but CO2CRC studies are at a very preliminary stage. The shallower Surat Basin has good reservoirs but they contain fresh water. The issue of re-use of depleted hydrocarbon fields where fresh water is also present is still to be pursued. The deeper Bowen Basin has reservoirs but they have relatively poorer injectivity. However, some economic studies indicate that this may not be as great an issue as once thought and may be overcome by increasing the number of injectors. The basin also has the added advantage of limited formation damage due to drilling operations (Rigg & Cook, 2005).

Southern Perth Basin

Work is concluding on the southern Perth Basin with results that significantly build on the previous evaluation carried out by GEODISC. Due to a lack of suitable seal units at depth in the onshore portion of the basin, the focus has been in the offshore Vlaming Basin where the Gage Sandstone is proving the most likely reservoir for potential injection sites. Detailed 3D geological modelling is underway to simulate CO₂ in the reservoir and investigate possible risks (Causebrook et. al., 2004).

Otway Basin

Modelling is also underway for the Otway Basin, which is investigating several CO₂ storage options in the onshore and offshore. This basin contains several leads and prospects each with unique advantages and risks (Spencer et al., 2004). Of particular interest are the natural accumulations of CO₂ that can be found within the CO₂-rich gas fields. This information has proven vital in the geochemical study of natural analogues. Evidence of palaeo accumulations is providing valuable examples of diagenetically-induced mineral reactions such as alteration of feldspars, chlorite, and calcite to kaolinite and quartz; and also the mineral precipitation of siderite in faults and fractures and filling porosity (Watson, 2004).

9.4 International Activity

International cooperation is vital for sharing of expertise and the CO₂CRC is actively involved in collaboration with demonstration sites at the government level around the globe.

International projects that are currently underway have passed on experience that is guiding planning of the first demonstration pilot project for Australia. The Frio Brine Pilot project in Texas injected 1600 tonnes of CO₂ into a brine-bearing sandstone to demonstrate safe storage and monitoring. Lessons passed on to the CO₂CRC relate to observation well design; the use of electromagnetic geophysical techniques in monitoring; and data that will be used for calibration and modelling.

In Saskatchewan, Canada, CO₂ is being used for enhanced oil recovery in the Weyburn Field. In Poland it is being used to help extract methane from coalbeds that are too deep to mine. In the Norwegian North Sea, in the first direct sequestration project, naturally occurring CO₂ is being stripped out of the methane from the Sleipner Field and is reinjected into a deep saline formation 1200m below the sea bed. Since this project started in 1996, over 1 million tons of CO₂ has been injected every year, and seismic techniques have monitored the successful dispersion and trapping of the gas within the formation. In a similar project in Algeria, which started in 2004, CO₂ is stripped from the natural gas produced from the In Salah Field and is reinjected back into the gas reservoir for long term storage at the rate of 1 million tonnes per year.

These examples, together with a wide range of other enhanced oil and gas recovery projects from places as diverse as Turkey, Mexico, and the Russian Federation, demonstrate the maturity of the technology of CO₂ injection (Causebrook et al., 2005).

The CO₂CRC continues to be involved in the Intergovernmental Panel on Climate Change (IPCC) with the final drafting of the Special Report on Carbon Capture and Storage.

Collaboration also exists between the CO₂CRC and the Carbon Sequestration Leadership Forum (CSLF). The key aims include making CCS technologies broadly available internationally, and to promote the appropriate technical, political, and regulatory environments for the development of such expertise.

A significant milestone for the CO2CRC in 2004-2005 was the completion of the Asia Pacific Economic Cooperation (APEC) study. The APEC study was initiated in 2001 by the APEC Expert Group on Clean Fossil Energy (EGCFE) as the first phase of a multi-phase program on CO₂ capture and geological storage in the APEC region. Essentially, the APEC study provides a comprehensive review of the geological prospectivity for CO₂ storage in selected member countries of the APEC region, including China, Indonesia, South Korea, Malaysia, the Philippines, Taiwan and Thailand. An important outcome of the study was the identification of potentially suitable CO₂ storage sites in the vicinity of the major Chinese population centres of Beijing, Shanghai and Zengzhou. This work was subsequently presented at the APEC forum in Korea 2005.

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10. Petroleum Data and Information

10.1 Introduction

Public access to existing petroleum exploration data reduces financial and exploration uncertainties for explorers, particularly when assessing frontier areas. The Australian and State governments have had a long-standing policy requiring the lodgement of exploration data and their public release after a confidentiality period, to encourage further exploration.

The lodgement of petroleum exploration and development data is a requirement under the arrangements of the *Petroleum (Submerged Lands) Act 1967* (the P(SL)A), and *Petroleum (Submerged Lands) Data Management Regulations 2004* and Data Guidelines which may be viewed on the web at http://www.ga.gov.au/oceans/drep_SubmitData.jsp.

The *Petroleum Search Subsidy Acts 1957* (PSSA), which was the forerunner to the P(SL)A, was enacted at a time when Australia was considered to be poorly prospective for oil and gas. Exploration was subsidised under the PSSA on condition that data were made available to assist future exploration. During the term of the PSSA significant discoveries were made in the Gippsland, Cooper, Bowen/Surat, and Amadeus basins, and on the North West Shelf.

As Australia's petroleum exploration and production industry became established the subsidy was removed with the introduction of the P(SL)A. This Act which governs petroleum exploration and production in Australia's offshore area beyond three nautical miles from the coast, retained the requirement to lodge exploration data and to make that data available for subsequent exploration. The arrangement continues to this day.

The Australian Government makes these exploration data available to industry to promote and facilitate oil and gas exploration. The data are also used by government agencies, including Geoscience Australia, to support technical advice to government and to provide pre-competitive data to promote acreage release.

Geoscience Australia is custodian of Australia's largest collection of petroleum data, including data lodged with the government under the PSSA and the P(SL)A. The collection also includes data collected by Geoscience Australia's Continental Margins Program and its petroleum research programs. It contains seismic data, well log data, cores and cuttings from exploration wells, well completion reports, seismic survey reports, and reports from the analysis of core samples. All petroleum data are available at cost of transfer. The digital data can be provided on media of choice, and physical data are available for viewing and analysis at Geoscience Australia's Data Repository. Data availability can also be viewed at the Geoscience Australia web-site address given above.

10.2 Data Access July 2004 - June 2005

In the past year processed data from 387 surveys and field data from 87 surveys – 23.1 Terabytes (23,100 Gigabytes) – has been accessed by the petroleum industry. This data comprised

- Raw Field
- Processed
- Reprocessed
- Navigation
- Velocities
- Acquisition, Processing and Interpretative reports

The following table (Table 10.1) shows the number of distinct surveys and the two main data types borrowed per basin.

Table 10.1 Number of surveys loaned by basin

Basin	Data Type	Surveys
Arafura	Field	2
	Processed	4
Bass	Processed	4
Bight	Field	3
	Processed	13
Bonaparte	Field	33
	Processed	117
Browse	Field	7
	Processed	50
Canning	Processed	11
Carnarvon	Field	20
	Processed	110
Carpentaria	Field	1
Exmouth Plateau	Field	3
	Processed	10
Gippsland	Field	4
	Processed	3
Money Shoal	Processed	4
Otway	Field	2
	Processed	12
Perth	Field	12
	Processed	46
Sydney	Processed	3

10.3 Remastering Project

The Australian Government Budget of May 2003 allocated resources to be used for the copying and concatenation onto high density media, of older technology tapes held in the Geoscience Australia Repository. The media being transcribed are 9 and 21 track tapes as well as 3480 cartridges.

The copying and concatenation of the seismic data will result in more efficient access and lower costs for petroleum companies wanting to use this seismic data for processing and interpretation. After copying and concatenation some of the older surveys can be contained completely on a few tape cartridges. Currently companies are required to borrow the large number of older media associated with a seismic survey and return copies to Geoscience Australia.

All transcription, quality control and physical disposal is carried out by companies in Perth. The transcription contracts were awarded to Guardian Data and SpectrumData. All quality control is being carried out by GeoCom Services Australia. At the completion of copying and quality control the tapes are disposed of in Perth and are recycled into plastic products. The Remastering Project has been in operation since January 2004. Please refer to Table 10.2 for all completed surveys (July 2005).

Table 10.2: Remastered surveys by basin

Survey	Vintage	Basin	State
Arafura Sea D4 Marine Seismic & Magnetic	1971	Arafura / Bonaparte Basin	NT
M82A Marine Seismic	1982	Arafura / Money Shoal Basin	NT
Arafura Sea D6 Marine Seismic	1973	Arafura Basin	NT
Gulf of Carpentaria 1981 Marine Seismic	1981	Arafura Basin	NT
New Year Island Seismic	1968	Arafura Basin	NT
NT/P36 Arafura Sea 1982 Marine Seismic	1982	Arafura Basin	NT
NT/P36 Marine Seismic (Arafura Sea S81)	1981	Arafura Basin	NT
BS89A/B - BS90A/B and T89/2 Marine Seismic	1990	Bass / Otway Basin	Tas
B70A Marine Seismic & Magnetic	1971	Bass Basin	Tas
B71A Marine Seismic & Magnetic	1972	Bass Basin	Tas, Vic
Bass 1988 Marine Seismic	1988	Bass Basin	Tas
Bridge Bass 1990 Marine Seismic	1990	Bass Basin	Tas
HB 80A & Pookanah Detail Marine Seismic	1980	Bass Basin	Tas
HB77A Marine Seismic	1977	Bass Basin	Tas
Hummock Marine Seismic	1996	Bass Basin	Tas
Hunter 1992 Marine Seismic	1992	Bass Basin	Tas
Great Australia Bight (R7) Marine Seismic	1973	Bight Basin	SA
R5 Phase I Marine Seismic, Refraction & Magnetic	1970	Bight Basin	SA
R5 Phase II Marine Seismic & Magnetic	1971	Bight Basin	SA
Scientific Investigation Marine Seismic	1982	Bight Basin	SA
Kendrew-Cootamundra Marine Seismic	1974	Bonaparte / Browse / Carnarvon Basin	WA
H2683D Jabiru & Extension Marine Seismic	1984	Bonaparte / Browse Basin	NT
HA7 Marine Seismic	1991	Bonaparte / Browse Basin	NT
HB5 Marine Seismic	1991	Bonaparte / Browse Basin	NT

Table 10.2: Remastered surveys by basin contd.

Survey	Vintage	Basin	State
Kym Marine Seismic	1990	Bonaparte / Browse Basin	NT
Legendre-Marie Seismic	1969	Bonaparte / Browse Basin	NT,WA
PK90 Marine Seismic	1991	Bonaparte / Browse Basin	NT
Tessa-Troubadour Marine Seismic, Gravity & Magnetic	1976	Bonaparte / Browse Basin	NT,WA
HA88B Marine Seismic	1989	Bonaparte / Money Shoal Basin	NT
1990 Bonaparte Gulf Marine Seismic	1990	Bonaparte Basin	NT,WA
1991 Kuhuma Marine Seismic	1991	Bonaparte Basin	WA
1993 Ammonite Marine Seismic	1994	Bonaparte Basin	NT
84AS Marine Seismic	1984	Bonaparte Basin	NT
90N Marine Seismic	1990	Bonaparte Basin	WA
90W Marine Seismic	1990	Bonaparte Basin	NT,WA
Anderdon Marine Seismic	1990	Bonaparte Basin	NT
Andromeda Marine Seismic	1996	Bonaparte Basin	NT
B-1/85 Marine Seismic	1986	Bonaparte Basin	WA
B-1/88 2D Marine Seismic	1988	Bonaparte Basin	WA
B-1/88 3D Marine Seismic	1988	Bonaparte Basin	WA
B89 Marine Seismic	1989	Bonaparte Basin	NT,WA
Barnett Marine Seismic	1984	Bonaparte Basin	NT
Camden Marine Seismic	1991	Bonaparte Basin	NT
Cape Talbot Marine Seismic	1974	Bonaparte Basin	NT,WA
Cartier Marine Seismic	1973	Bonaparte Basin	NT,WA
Caspian Marine Seismic	1991	Bonaparte Basin	WA
Copernicus Marine Seismic	1992	Bonaparte Basin	NT
Donder Marine Seismic	1996	Bonaparte Basin	WA
Endeavour Marine Seismic	1995	Bonaparte Basin	WA
Eva Marine Seismic	1989	Bonaparte Basin	NT
HA1 Marine Seismic	1986	Bonaparte Basin	NT
HA2 Marine Seismic	1988	Bonaparte Basin	NT
HA3 Marine Seismic	1988	Bonaparte Basin	NT,WA
HA5 Marine Seismic	1989	Bonaparte Basin	NT
HA6 Marine Seismic	1990	Bonaparte Basin	NT
Hat Point Marine Seismic & Magnetic	1973	Bonaparte Basin	NT,WA
HB1 Marine Seismic	1986	Bonaparte Basin	NT
HB2 Marine Seismic	1988	Bonaparte Basin	NT
HCB91A Marine Seismic	1991	Bonaparte Basin	WA
Helvetius 1992 Marine Seismic	1992	Bonaparte Basin	WA
Howland (HD) Marine Seismic	1980	Bonaparte Basin	NT
HV11 Skua 3D Marine Seismic	1990	Bonaparte Basin	NT
HV13 Marine Seismic	1993	Bonaparte Basin	NT
HV6 Marine Seismic, Gravity, & Magnetic	1987	Bonaparte Basin	NT
Kuhuma Marine Seismic	1990	Bonaparte Basin	WA
Londonderry Rise Marine Seismic	1968	Bonaparte Basin	WA
NT/P02 1982 Marine Seismic & Gravity	1982	Bonaparte Basin	NT
NT/P02 Marine Seismic	1980	Bonaparte Basin	NT
NT/P47 and NT/P48 Marine Seismic	1997	Bonaparte Basin	NT
PC95 Marine Seismic	1995	Bonaparte Basin	WA

Table 10.2: Remastered surveys by basin contd.

Survey	Vintage	Basin	State
Peron Island Marine Seismic	1972	Bonaparte Basin	NT,WA
PW91 Marine Seismic	1991	Bonaparte Basin	WA
Rambler Marine Seismic	1993	Bonaparte Basin	WA
Sahul Shelf Seismic	1966	Bonaparte Basin	NT,WA
Sahul-Ashmore Seismic	1971	Bonaparte Basin	NT
Scientific Investigation 16SL Marine Seismic	1984	Bonaparte Basin	NT
SPA zone A Marine Seismic	1991	Bonaparte Basin	NT
Stuart Marine Seismic	1992	Bonaparte Basin	WA
TR89A Marine Seismic	1989	Bonaparte Basin	NT
TS89A Marine Seismic	1989	Bonaparte Basin	NT
Van Diemen Rise Seismic	1969	Bonaparte Basin	NT,WA
Woodbine Marine Seismic	1989	Bonaparte Basin	NT
York Sound Marine Seismic	1976	Bonaparte Basin	NT
Project 82A of 2DW Marine Seismic	1982	Browse / Carnarvon Basin	WA
Offshore Canning-Seringapatam Seismic	1968	Browse / Canning Basin	WA
Project 82D of 2DW (Dampier-Broome Marine Seismic)	1981	Browse / Carnarvon Basin	WA
1989 Loretta Marine Seismic	1989	Browse Basin	WA
1991 MI Marine Seismic	1992	Browse Basin	WA
Adele-Scott Seismic	1969	Browse Basin	NT,WA
BW87_35P Marine Seismic	1987	Browse Basin	WA
Calliance Reef Marine Seismic & Seismic Refraction	1983	Browse Basin	WA
Caswell-Echuca Marine Seismic Survey	1984	Browse Basin	WA
Churchill 1980 Marine Seismic	1980	Browse Basin	WA
Hermite-Barton Marine Seismic, Gravity & Magnetic	1978	Browse Basin	NT,WA
Lynher Marine Seismic	1988	Browse Basin	WA
Olga Marine Seismic	1988	Browse Basin	WA
Project 82K of Dampier Broome Marine Seismic (2DW)	1981	Browse Basin	NT
Projects 82E-1 of 2DW Marine Seismic	1981	Browse Basin	WA
Projects 82E-2 & 82J of 2DW Marine Seismic	1981	Browse Basin	WA
Projects 82F & 82G 2DW Marine Seismic	1982	Browse Basin	WA
Sascha 1992 Seismic	1992	Browse Basin	WA
Scientific Investigation 16SL Marine Seismic	1984	Browse Basin	NT
SPA 4SL/95-96 (Browse Basin) Marine Seismic	1996	Browse Basin	WA
SPA 5SL/88-9 Part 2 Marine Seismic	1988	Browse Basin	WA
H93B Marine Seismic	1993	Canning / Carnarvon Basin	WA
Montebello-Turtle Seismic	1972	Canning / Carnarvon Basin	WA
C94A Marine Seismic	1994	Canning Basin	WA
Lambert Shelf Marine Seismic	1980	Canning Basin	WA
Minilya Marine Seismic	1977	Canning Basin	WA
West Broome Marine Seismic	1982	Canning Basin	WA
A76A Marine Seismic	1976	Carnarvon / Perth Basin	WA
A77A Marine Seismic	1977	Carnarvon / Perth Basin	WA
1985 De Grey Marine Seismic	1985	Carnarvon Basin	WA
86202P Marine Seismic & Magnetic	1986	Carnarvon Basin	WA

Table 10.2: Remastered surveys by basin contd.

Survey	Vintage	Basin	State
88202P Marine Seismic	1988	Carnarvon Basin	WA
Barrow Marine (221) Seismic	1968	Carnarvon Basin	WA
Boronia Marine Seismic	1983	Carnarvon Basin	WA
C81A Marine Seismic	1982	Carnarvon Basin	WA
C83A Marine Seismic	1983	Carnarvon Basin	WA
C83B Marine Seismic	1983	Carnarvon Basin	WA
C92A Marine Seismic	1992	Carnarvon Basin	WA
Campbell (427) Marine Seismic	1978	Carnarvon Basin	WA
Chimaera	1996	Carnarvon Basin	WA
Cuvier 1992 Marine Seismic	1992	Carnarvon Basin	WA
Dampier Project 80A Marine Seismic	1980	Carnarvon Basin	WA
Dampier Project 80C Marine Seismic	1980	Carnarvon Basin	WA
Dampier Project 80D Marine Seismic	1980	Carnarvon Basin	WA
Dampier Project 80X Marine Seismic	1980	Carnarvon Basin	WA
Dampier-Beagle Marine Seismic	1975	Carnarvon Basin	WA
Donna Marine Seismic	1995	Carnarvon Basin	WA
Eaglehawk Marine Seismic	1986	Carnarvon Basin	WA
Experimental Beluga Marine Seismic	1988	Carnarvon Basin	WA
GSI Scientific 10SL Marine Seismic, Gravity & Magnetic	1976	Carnarvon Basin	WA
HC90A Marine Seismic	1990	Carnarvon Basin	WA
HC93T Marine Seismic	1994	Carnarvon Basin	WA
HE96 2D Marine Seismic	1996	Carnarvon Basin	WA
HH88 Marine Seismic	1988	Carnarvon Basin	WA
Hilda (366) Marine Seismic & Magnetic	1973	Carnarvon Basin	WA
Lambert Shelf Marine Seismic	1980	Carnarvon Basin	WA
Mahakam Marine Seismic	1992	Carnarvon Basin	WA
Mawby-East Angle 1984 Marine Seismic	1984	Carnarvon Basin	WA
Michelle Marine Seismic	1993	Carnarvon Basin	WA
Mohaku 1993 Seismic	1993	Carnarvon Basin	WA
Nickol Marine Seismic	1988	Carnarvon Basin	WA
North Rankin Appraisal Marine Seismic	1977	Carnarvon Basin	WA
Outer Beagle Marine Seismic	1993	Carnarvon Basin	WA
Project 82B of 2DW Marine Seismic	1982	Carnarvon Basin	WA
Rosie 2D/3D Marine Seismic	1997	Carnarvon Basin	WA
Rundle Marine Seismic	1994	Carnarvon Basin	WA
SPA 2SL/91-2 and Extension 1SL/92-3 2D Marine Seismic	1992	Carnarvon Basin	WA
SPA 3D Marine Seismic (Parker 3D)	1991	Carnarvon Basin	WA
Steamboat Spit Marine Seismic	1973	Carnarvon Basin	WA
Sultan (367) Marine Seismic & Magnetic	1973	Carnarvon Basin	WA
Swell 3D Marine Seismic	1993	Carnarvon Basin	WA
Vlaming - 467 Marine Seismic	1989	Carnarvon Basin	WA
Vlaming 2 Marine Seismic	1992	Carnarvon Basin	WA
X95A Marine Seismic (Scarborough 2D)	1995	Carnarvon Basin	WA
C81B Marine Seismic	1981	Carnarvon Basin / Exmouth Plateau	WA

Table 10.2: Remastered surveys by basin contd.

Survey	Vintage	Basin	State
X79B Marine Seismic	1979	Carnarvon Basin / Exmouth Plateau	WA
1989 Q/21P Marine Seismic	1989	Carpentaria Basin	Qld
Carpentaria Basin 1980 Marine Seismic	1980	Carpentaria Basin	NT
Duyken 1982 Marine Seismic	1982	Carpentaria Basin	NT
HC80 Marine Seismic	1980	Carpentaria Basin	Qld
NT/P32 1980 Marine Seismic	1980	Carpentaria Basin	NT
Eaglehawk Marine Seismic	1986	Dampier Sub-basin	WA
Denman Basin Marine Seismic	1972	Denman Basin	SA
Offshore Twilight Cove Seismic	1970	Eucla Basin	WA
South Australian Shelf R-3 Seismic	1969	Eucla Basin	SA
SPA 9SL/89-90 Eucla Basin Marine Seismic, Gravity & Magnetic	1990	Eucla Basin	WA
X78A Marine Seismic	1978	Exmouth Plateau	WA
G69B Australia Marine Seismic & Magnetic	1970	Gippsland Basin	Tas, Vic
G74A Marine Seismic	1975	Gippsland Basin	Vic
G76A Marine Seismic	1976	Gippsland Basin	Vic
G80A and Extension Marine Seismic	1980	Gippsland Basin	Vic
G81A Marine Seismic	1981	Gippsland Basin	Vic
G82C Turrum 3D Marine Seismic	1982	Gippsland Basin	Vic
G84A Marine Seismic	1985	Gippsland Basin	Vic
G85A Marine Seismic	1985	Gippsland Basin	Vic
G88A Experimental Marine Seismic (John Dory)	1988	Gippsland Basin	Vic
G89A Marine Seismic	1990	Gippsland Basin	Vic
G89A Marine Seismic: Blackback 3D Grid	1990	Gippsland Basin	Vic
GB79 Marine Seismic	1980	Gippsland Basin	Vic
GH82A Marine Seismic & Magnetic	1982	Gippsland Basin	Vic
GH88A Marine Seismic	1988	Gippsland Basin	Vic
GL88A Marlo Marine Seismic & Magnetic	1988	Gippsland Basin	Vic
GP-81A Marine Seismic	1981	Gippsland Basin	Vic
GS81A Marine Seismic	1982	Gippsland Basin	Vic
GS-82A Marine Seismic	1982	Gippsland Basin	Vic
GS88A Marine Seismic	1988	Gippsland Basin	Vic
GS88C Marine Seismic	1988	Gippsland Basin	Vic
GS95A Marine Seismic (Basker Manta 3D)	1995	Gippsland Basin	Vic
GUT-83A Marine Seismic & Magnetic	1983	Gippsland Basin	Vic
GUT-83P Marine Seismic & Magnetic	1983	Gippsland Basin	Tas
NT/P36 Marine Seismic (Arafura Sea S81)	1981	Money Shoal Basin	NT
Cape Nelson to Cape Otway Seismic	1973	Otway Basin	Vic
OH91A Marine Seismic	1991	Otway Basin	Vic
OH91B Marine Seismic	1991	Otway Basin	Vic
OS88A Marine Seismic, Gravity, & Magnetic	1988	Otway Basin	Vic
OS90A	1990	Otway Basin	Vic
Otway (080A) Marine Seismic	1980	Otway Basin	Vic
1982 Seabird III Marine Seismic	1982	Perth Basin	WA
1984 WA-162-P Marine Seismic (B)	1984	Perth Basin	WA

Table 10.2: Remastered surveys by basin contd.

Survey	Vintage	Basin	State
1985 WA-162-P Experimental Marine Seismic	1985	Perth Basin	WA
A78A Marine Seismic	1978	Perth Basin	WA
Beagle 1992 2D Marine Seismic	1992	Perth Basin	WA
Cape Leeuwin Marine Seismic	1980	Perth Basin	WA
Geelvink Channel Seismic	1970	Perth Basin	WA
Kerrie Marine Seismic	1991	Perth Basin	WA
Koombana 3 (403) Marine Seismic & Magnetic	1975	Perth Basin	WA
Perth Waters (251-252) Marine Seismic & Magnetic	1970	Perth Basin	WA
Plum Marine Seismic	1992	Perth Basin	WA
V82A Marine Seismic	1982	Perth Basin	WA
V83A Marine Seismic	1983	Perth Basin	WA
V85A Marine Seismic	1985	Perth Basin	WA
V90A Marine Seismic	1990	Perth Basin	WA

10.4 Lodgement of data

The P(SL)A is administered in each State/Territory by a Designated Authority (DA) on behalf of the Commonwealth. The DA has the responsibility under the Act for determination of matters relating to the operation of the Act in offshore areas of the State. All lodgements and access to data formally involve the office of the DA in each State, and direct access to the Geoscience Australia repositories is also possible.

Under the P(SL)A, petroleum exploration and production data are made publicly available after specified periods of confidentiality. Basic data are normally available after three years and most interpretative data are available after five years. Basic data comprise the field and processed data normally available to the explorationist for interpretation (for example, seismic reflection and other geophysical data in both field and processed form; well stratigraphy; well logs; well test data and core and cuttings). Interpretative data refer to professional assessments in terms of potential for discovery and production of hydrocarbons, and may arise from studies of basic data.

10.5 Data Availability

Digital seismic exploration and well log data

Geoscience Australia's collection is made up of over 380,000 digital magnetic tapes, some analogue data, and associated paper data from over 700 seismic surveys. The digital magnetic tapes contain field seismic survey data and well log, processed seismic and navigation data. The tape media include 21 track tapes, 9 track tapes, 3480 tapes, 3590 tapes, 8mm and DAT tapes.

Drilling and geophysical survey reports

Geoscience Australia's repository houses more than 3,500 drilling reports, geophysical reports and support data includes:

- operations, positioning, processing and acquisition reports, shotpoint location and water depth maps, velocity data and seismic sections;
- interpretative data comprising various reports and maps;
- drilling data comprising well completion reports, logs, maps, and other data generated during operations and;
- prints and transparencies for logs, maps and seismic sections.

While most of the reports are printed documents, more recent reports are submitted on CD, with processed seismic data being lodged on tapes. Data on open file can be viewed at the Symonston repository or can be scanned to CD on request.

Cores, cuttings, and fluid samples

The following physical data are available:

- samples from over 6,005 petroleum wells and stratigraphic holes;
- over 150,000 m of down-hole core samples;
- over 3,090,000 m of down-hole drill cuttings;
- over 3,250 sidewall cores;
- 14,000 thin sections and 9,000 reservoir plugs;
- assorted prepared samples from previous analyses;
- over 1,200 open file destructive analyses reports, and
- documented duplicate and unwashed samples.

10.6 Metadata databases

The Petroleum Exploration Data Index (PEDIN) contains data for over 10,000 wells and 4,500 geophysical surveys. Basic drilling data are recorded for all wells drilled in Australia. More detailed data, such as formation tops, down-hole temperature and seismic horizon intersections, are recorded for PSSA and P(SL)A wells. Index data is recorded for onshore and offshore geophysical surveys including operator, titles, basins and survey specifications. Surveys conducted under the PSSA and P(SL)A have more details such as summaries from data acquisition, navigation and interpretation reports, line numbers and other line information. PEDIN interfaces with other Geoscience Australia databases.

The Petroleum Information Management System (PIMS) manages data lodged under Australian Government legislation. This database is accessible through the Geoscience Australia website (<http://www.ga.gov.au/oracle/npd/>).

10.7 Contacts

All Geoscience Australia's data collections are located in the Geoscience Australia Data Repository at Symonston, ACT, Australia. Inquiries regarding lodgement of and

access to data in the repositories, including charges for access, may be made through the Designated Authorities or directly with Geoscience Australia Data Repositories, or through the Geoscience Australia website at http://www.ga.gov.au/oceans/og_Rpstry.jsp.

Geoscience Australia Data Repository

Postal Address: GPO Box 378 Canberra, ACT 2601, Australia
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Appendices

Appendix A 2004

Wells drilled for exploration, development and production by State, 2004

APPENDIX A: WELLS DRILLED FOR EXPLORATION, DEVELOPMENT AND PRODUCTION BY STATE, 2004

Operator Well Permit	Basin	Location	Elevation	Spudded TD reached	Final TD Metres drilled	Well remark	Classi- fication
QUEENSLAND							
BEACH Kenmore 31 PL32	Eromanga	-26° 39' 3" 143° 25' 55"	RT 175 GL 170	16-Nov-04 25-Nov-04	1,455 1,455	Cased and suspended as an oil producer.	DEV DEV
BEACH Kenmore 32 PL32	Eromanga	-26° 39' 25" 143° 26' 13"	RT 170 GL 165	01-Dec-04 06-Dec-04	1,471 1,471	Completed as an oil producer.	DEV DEV
BEACH Kenmore 33 PL32	Eromanga	-26° 39' 30" 143° 26' 30"	RT 169 GL 164	12-Dec-04 16-Dec-04	1,450 1,450	Cased and suspended as an oil producer.	DEV DEV
ENTERPRISE OIL Nulla Nulla 1 (Enterprise) ATP549P	Eromanga	-26° 21' 53" 141° 6' 40"	RT 154 GL 150	14-Oct-04 30-Oct-04	2,514 2,514	Plugged and abandoned, dry.	NFW NFW
ENTERPRISE OIL Yellowbank Creek 4 PL18	Surat	-27° 45' 23" 149° 0' 39"	RT 264 GL 260	24-Oct-04 31-Oct-04	1,888 1,888	Cased and suspended as an oil producer.	DEV DEV
MOSAIC Churchie 4 PL192	Surat	-27° 5' 15" 149° 12' 32"	RT 251.2 GL 246.2	12-Dec-03 08-Jan-04	2,123 2,123	Cased and suspended as a gas producer.	EXT EXT
MOSAIC Churchie 5 PL 1	Bowen	-27° 5' 59" 149° 14' 21"	RT 261 GL 256	29-Sep-04 10-Oct-04	2,265 2,265	Plugged and abandoned, dry.	DEV DEV
MOSAIC Churchie 6 PL192	Surat	-27° 5' 1" 149° 12' 2"	RT 250 GL 245	11-Nov-04 26-Nov-04	2,100 2,100	Completed as a gas producer.	DEV DEV
MOSAIC Churchie 7 PL192	Surat	-27° 5' 2" 149° 12' 28"	RT 251 GL 246	30-Nov-04 15-Dec-04	2,089 2,089	Completed as a gas producer.	DEV DEV
MOSAIC Mamaree 2 PL202	Surat	-27° 41' 5" 149° 28' 28"	RT 284 GL 279	15-Aug-04 03-Sep-04	2,653 2,653	Plugged and abandoned, dry.	EXT EXT
MOSAIC Rockhampton High 1 ATP709P	Surat	-27° 27' 20" 149° 20' 35"	RT 341 GL 336	08-Sep-04 19-Sep-04	2,528 2,528	Cased and suspended as an oil and gas producer.	NFW NFD
MOSAIC Waggamba 2 ATP471P	Surat	-27° 39' 42" 149° 27' 47"	RT 281.1 GL 276.1	13-Jan-04 16-Feb-04	2,626 2,626	Completed as an oil and gas producer.	DEV DEV
MOSAIC Waggamba 3 ATP471P	Surat	-27° 39' 39" 149° 26' 57"	RT 263 GL 258	23-Mar-04 02-Apr-04	2,589 2,589	Cased and suspended as a gas producer.	DEV DEV
OCA Myall Creek 6 PL174	Surat	-27° 4' 46" 149° 12' 9"	RT 250 GL 245	10-Nov-03 28-Jan-04	2,037 2,037	Cased and suspended as a gas producer.	DEV DEV
OILEX Connolly 1 (Oilex) ATP545P	Cooper	-24° 24' 4" 143° 30' 24"	NA GL 171	10-Aug-04 23-Aug-04	1,732 1,732	Plugged and abandoned, dry.	NFW NFW
OILEX Don Juan North 1 ATP593P	Surat	-26° 1' 1" 148° 17' 5"	NA GL 525	17-Sep-04 22-Sep-04	715 715	Plugged and abandoned, dry.	NFW NFW

APPENDIX A (cont'd)

Operator Well Permit	Basin	Location	Elevation	Spudded TD reached	Final TD Metres drilled	Well remark	Classi- fication
QUEENSLAND							
OILEX Giligulgul North 1 ATP574P	Surat	-26° 21' 40" 149° 56' 48"	RT 463 GL 459	13-Feb-04 22-Feb-04	1,440 1,440	Plugged and abandoned, dry.	NFW NFW
OILEX Rookwood East 1 ATP608P	Surat	-27° 13' 47" 148° 30' 43"	RT 280 GL 276	22-Nov-04 26-Nov-04	1,450 1,450	Completed as an oil producer.	EXT EXT
OILEX Rookwood South 1 ATP608P	Surat	-27° 13' 42" 148° 30' 25"	RT 7 GL 272	02-Sep-04 08-Sep-04	1,419 1,419	Cased and suspended as an oil producer.	NFW NFD
OILEX Rookwood West 1 ATP608P	Surat	-27° 13' 47" 148° 30' 10"	RT 274.3 GL 274.3	01-Dec-04 07-Dec-04	1,451 1,451	Plugged and abandoned, dry.	EXT EXT
ORIGIN Palmerston 1 ATP682P	Surat	-27° 33' 52" 149° 26' 52"	RT 335.2 GL 330	31-Jan-04 01-Mar-04	2,815 2,815	Cased and suspended as a gas producer.	NFW NFD
ORIGIN Weribone 2 ATP470P	Bowen/Surat	-27° 19' 44" 149° 20' 18"	RT 333.2 GL 328	07-Mar-04 19-Apr-04	2,258 2,258	Cased and suspended as a gas producer.	EXT EXT
SAMSON Overston 2 ATP645P	Surat	-27° 5' 13" 149° 27' 15"	NA GL 266	22-Mar-04 14-Apr-04	3,029 3,029	Plugged and abandoned, dry.	EXT EXT
SAMSON Overston 2 ST1 ATP645P	Surat	-27° 5' 13" 149° 27' 15"	NA GL 266	19-Apr-04 27-Apr-04	3,140 321	Cased and suspended as a gas producer.	EXT EXT
SANTOS Apollosa 1 ATP259P	Cooper	-28° 4' 47" 141° 51' 37"	RT 74.6 GL 70.7	06-Jan-04 20-Jan-04	1,765 1,765	Plugged and abandoned, dry.	NFW NFW
SANTOS Baryulah 6 PPL131	Cooper	-27° 45' 10" 141° 52' 8"	RT 73.2 GL 68.1	22-Aug-04 08-Sep-04	2,629 2,629	Cased and suspended as a gas producer.	DEV DEV
SANTOS Challum 26 PL58	Cooper/Eromanga	-27° 22' 47" 141° 33' 56"	RT 86 GL 80.9	31-Jan-04 12-Feb-04	2,380 2,380	Cased and suspended as a gas producer.	DEV DEV
SANTOS Challum 27 PL58	Cooper/Eromanga	-27° 23' 37" 141° 32' 40"	RT 91.6 GL 86.5	16-Feb-04 04-Mar-04	2,411 2,411	Cased and suspended as a gas producer.	DEV DEV
SANTOS Corsair 1 ATP259P	Cooper	-27° 21' 6" 142° 9' 13"	RT 87.4 GL 82.4	10-Jan-04 27-Jan-04	2,612 2,612	Plugged and abandoned, dry.	NFW NFW
SANTOS Galex 1 PL61	Cooper	-27° 22' 25" 141° 51' 38"	RT 88 GL 84	21-Oct-04 03-Nov-04	2,496 2,496	Cased and suspended as a gas producer.	NFW NFD
SANTOS Hebe 1 ATP259P	Cooper	-27° 43' 48" 141° 57' 29"	RT 75 GL 69	04-Jan-04 22-Jan-04	2,550 2,550	Completed as a gas producer.	NFW NFD
SANTOS Hector 1 ATP259P	Cooper	-27° 55' 26" 141° 37' 8"	RT 79.6 GL 73.7	04-Dec-04 16-Dec-04	2,478 2,478	Cased and suspended as an oil and gas producer.	NFW NFD

APPENDIX A (cont'd)

Operator Well Permit	Basin	Location	Elevation	Spudded TD reached	Final TD Metres drilled	Well remark	Classi- fication
QUEENSLAND							
SANTOS Hurricane 1 (Santos) ATP259P	Cooper	-27° 24' 9" 141° 14' 12"	RT 97 GL 91.9	23-Dec-03 05-Jan-04	2,302 2,302	Plugged and abandoned, dry.	NFW NFW
SANTOS Judga 3 PL62	Cooper	-27° 25' 40" 141° 0' 59"	RT 78.6 GL 72.7	07-Oct-04 19-Oct-04	2,406 2,406	Completed as a gas producer.	DEV DEV
SANTOS Karmona 4 PL81	Cooper	-27° 17' 54" 141° 37' 8"	RT 140 GL 135	11-Dec-04 11-Dec-04	38 38	Plugged and abandoned, dry.	DEV DEV
SANTOS Karmona 4A PL81	Cooper	NA NA	RT 140 GL 135	18-Dec-04 28-Dec-04	2,589 2,589	Cased and suspended as a gas producer.	DEV DEV
SANTOS Maya 1 ATP259P	Surat	-27° 14' 15" 142° 2' 6"	RT 81 GL 76	28-Sep-04 21-Oct-04	2,458 2,458	Cased and suspended as an dry producer.	NFW NFW
SANTOS Olympus 1 ATP259P	Cooper	-28° 12' 28" 141° 39' 21"	RT 87.3 GL 82.2	20-Jul-04 29-Jul-04	1,975 1,975	Plugged and abandoned, dry.	NFW NFW
SANTOS Stilton 1 ATP259P	Cooper	-27° 32' 11" 141° 52' 45"	RT 77 GL 71	10-Nov-04 27-Nov-04	2,898 2,898	Cased and suspended as a gas producer.	NFW NFD
SANTOS Turandot 1 ATP259P	Cooper	-28° 5' 13" 141° 31' 52"	RT 74.6 GL 70.7	28-Jan-04 12-Feb-04	1,756 1,756	Plugged and abandoned, dry.	NFW NFW
SANTOS Wellington 3 PPL131	Cooper	-27° 43' 27" 141° 48' 23"	RT 73.5 GL 68.4	03-Aug-04 19-Aug-04	2,845 2,845	Plugged and abandoned, dry.	EXT EXT
SANTOS Wellington 4 PL131	Cooper	-27° 44' 15" 141° 48' 31"	RT 73.2 GL 68.2	12-Sep-04 22-Sep-04	2,489 2,489	Cased and suspended as a gas producer.	DEV DEV
SANTOS Wellington 5 PL131	Cooper	-27° 44' 20" 141° 51' 55"	RT 73 GL 68	25-Nov-04 09-Dec-04	2,504 2,504	Cased and suspended as a gas producer.	DEV DEV
SANTOS Yangtse 1 ATP259P	Cooper	-27° 39' 11" 142° 4' 40"	RT 76 GL 70.2	23-Oct-04 03-Nov-04	2,252 2,252	Cased and suspended as a gas producer.	NFW NFD

METRES DRILLED - QUEENSLAND

Wells	Onshore	Offshore	Total
Exploration	54,835	-	54,835
Development	37,416	-	37,416
Total	92,250	-	92,250

NEW SOUTH WALES

EASTERN STAR Coonarah 6L PPL 3	Gunnedah	-30° 21' 55" 149° 32' 34"	NA GL 218	03-Aug-04 17-Aug-04	1,047 1,047	Cased and suspended as a gas producer.	DEV DEV
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APPENDIX A (cont'd)

Operator Well Permit	Basin	Location	Elevation	Spudded TD reached	Final TD Metres drilled	Well remark	Classi- fication
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NEW SOUTH WALES

METRES DRILLED - NEW SOUTH WALES

Wells	Onshore	Offshore	Total
Exploration	-	-	-
Development	1,047	-	1,047
Total	1,047	-	1,047

VICTORIA

APACHE Grayling 1 VIC/P54	Gippsland	-38° 9' 40" 148° 17' 36"	NA -	23-Dec-04 24-Dec-04	800 800	Plugged and abandoned, dry.	NFW NFW
APACHE Grayling 1A VIC/P54	Gippsland	-38° 9' 40" 148° 17' 35"	NA -	28-Dec-04 Drilling ahead	- 2,914		NFW -
APACHE Longtom 2 VIC/P54	Gippsland	-38° 6' 12" 148° 19' 1"	RT 21.5 WD -56.8	10-Nov-04 21-Nov-04	2,423 2,423	Plugged and abandoned, dry.	EXT EXT
APACHE Longtom 2 ST1 VIC/P54	Gippsland	-38° 6' 12" 148° 19' 1"	RT 21.5 WD -56.8	17-Nov-04 19-Nov-04	2,148 188	Cased and suspended as a gas producer.	EXT EXT
BASIN Baleen 4 VIC/L21	Gippsland	-38° 0' 24" 148° 26' 36"	RT 25 WD -53.1	27-Sep-04 22-Oct-04	2,290 1,855	Completed as a gas producer.	DEV DEV
BASS STRAIT Moby 1 VIC/P47	Gippsland	-38° 1' 44" 148° 30' 27"	RT 21.5 WD -53	07-Oct-04 12-Oct-04	660 660	Plugged and abandoned, dry.	NFW NFD
ESSENTIAL Findra 1 PEP159	Otway	-38° 13' 20" 142° 10' 4"	RT 61.3 GL 57	26-Jun-04 30-Jun-04	889 889	Plugged and abandoned, dry.	NFW NFW
ESSENTIAL Killarney 1 (Essential) PEP152	Otway	-38° 21' 23" 142° 15' 24"	NA -	09-Jun-04 18-Jun-04	1,640 1,640	Plugged and abandoned, dry.	NFW NFW
ESSO Marlin A 6A VIC/L3	Gippsland	-38° 13' 56" 148° 13' 16"	NA WD -60.9	05-Mar-04 22-Mar-04	3,268 2,255	Plugged and abandoned, dry.	DEV DEV
ESSO Marlin A 6A ST1 VIC/L3	Gippsland	-38° 13' 56" 148° 13' 16"	NA WD -60.9	26-Mar-04 01-Apr-04	3,563 353	Plugged and abandoned, dry.	DEV DEV
ESSO Marlin A 10A VIC/L 3	Gippsland	-38° 13' 55" 148° 13' 10"	RT 27.91 WD -59	09-Aug-04 24-Aug-04	3,248 2,604	Plugged and abandoned, dry.	DEV DEV
ESSO Marlin A 10A ST1 VIC/L 3	Gippsland	-38° 13' 55" 148° 13' 10"	RT 27.91 WD -59	06-Sep-04 14-Sep-04	3,491 1,163	Completed as a gas producer.	DEV DEV
ESSO Marlin A 22A VIC/L3	Gippsland	-38° 13' 55" 148° 13' 10"	KB 27.4 WD -60.9	28-May-04 11-Jun-04	3,617 1,717	Completed as an oil and gas producer.	DEV DEV

APPENDIX A (cont'd)

Operator Well Permit	Basin	Location	Elevation	Spudded TD reached	Final TD Metres drilled	Well remark	Classi- fication
VICTORIA							
ESSO Marlin A 23A VIC/L3	Gippsland	-38° 13' 55" 148° 13' 10"	RT 27.91 WD -59	12-Jul-04 22-Jul-04	3,051 1,671	Plugged and abandoned, dry.	DEV DEV
ESSO Marlin A 24A VIC/P 3	Gippsland	-38° 13' 55" 148° 13' 10"	KB 27.4 WD -61	08-Apr-04 28-Apr-04	3,275 2,619	Completed as an oil and gas producer.	DEV DEV
ESSO West Whiptail 1 VIC/L 1	Gippsland	-38° 19' 29" 115° 36' 19"	NA WD -38	09-May-04 20-May-04	1,539 1,539	Plugged and abandoned, dry.	EXT EXT
EXXONMOBIL Tuna A 15A VIC/L 9 R1	Gippsland	-38° 10' 16" 148° 25' 6"	NA -	24-Nov-04 08-Dec-04	3,283 3,283	Completed as an oil producer.	DEV DEV
KAROON GAS Megascolides 1 PEP162	Gippsland	-37° 46' 2" 145° 52' 51"	NA -	17-Nov-04 16-Dec-04	2,000 2,000	Cased and suspended as an oil producer.	
LAKES Trifon 2 PEP157	Gippsland	-38° 18' 16" 147° 11' 30"	RT 28.4 GL 25	04-May-04 11-Aug-04	2,488 2,488	Completed as a gas producer.	EXT EXT
LAKES Wombat 1 PEP157	Gippsland	-38° 21' 16" 147° 9' 32"	RT 14.6 GL 11	05-Dec-03 19-Jan-04	1,990 1,990	Completed as a gas producer.	NFW NFD
LAKES Wombat 2 PEP157	Gippsland	NA NA	RT 23.6 GL 20	30-Mar-04 23-Apr-04	1,550 1,550	Cased and suspended as a gas producer.	EXT EXT
LAKES Wombat 3 PEP157	Gippsland	-38° 21' 28" 147° 9' 32"	RT 22.65 GL 19	23-Sep-04 25-Oct-04	2,178 2,178	Completed as an oil and gas producer.	EXT EXT
SANTOS Amrit 1 VIC/P52	Otway	-38° 56' 5" 141° 44' 7"	RT 29 WD -1396	20-Nov-04 07-Dec-04	2,979 2,979	Plugged and abandoned, dry.	NFW NFW
SANTOS Callister 1 VIC/P51	Otway	-38° 31' 60" 141° 28' 23"	RT 29 WD -129	13-Oct-04 03-Nov-04	3,915 3,915	Plugged and abandoned, dry.	NFW NFW
SANTOS Martha 1 VIC/P44	Otway	-38° 37' 24" 142° 42' 5"	RT 21.5 WD -54.7	20-Oct-04 30-Oct-04	1,800 1,800	Plugged and abandoned, dry.	NFW NFD

METRES DRILLED - VICTORIA

Wells	Onshore	Offshore	Total
Exploration	12,735	14,303	27,038
Development	-	17,520	17,520
Total	12,735	31,823	44,558

TASMANIA

ORIGIN Trefoil 1 T/18P R3	Bass	-39° 51' 42" 145° 22' 30"	NA WD -68	30-Oct-04 24-Nov-04	3,545 3,545	Cased and suspended as a gas producer.	NFW NFD
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APPENDIX A (cont'd)

Operator Well Permit	Basin	Location	Elevation	Spudded TD reached	Final TD Metres drilled	Well remark	Classi- fication
TASMANIA							
ORIGIN Yolla 3 T/L1	Bass	-39° 50' 40" 145° 49' 6"	NA WD -80	10-Aug-04 04-Sep-04	3,497 3,497	Completed as a gas producer.	DEV DEV
ORIGIN Yolla 4 T/L1	Bass	-39° 50' 40" 145° 49' 6"	NA WD -80	18-Jun-04 11-Jul-04	3,235 3,235	Completed as an oil and gas producer.	DEV DEV
METRES DRILLED - TASMANIA							
Wells	Onshore	Offshore	Total				
Exploration	-	3,545	3,545				
Development	-	6,732	6,732				
Total	-	10,277	10,277				
SOUTH AUSTRALIA							
BEACH Christies 2 PEL 202	Eromanga	-27° 58' 54" 139° 22' 16"	RT 33 GL 28	24-Aug-04 09-Sep-04	1,616 1,616	Cased and suspended as an oil producer.	EXT EXT
BEACH Christies 3 PEL 92	Eromanga	-27° 58' 59" 139° 22' 24"	RT 32.1 GL 27.1	19-Sep-04 28-Sep-04	1,857 1,857	Completed as an oil producer.	EXT EXT
BEACH Goolwa 1 PEL 107	Cooper/Eromanga	-28° 7' 37" 139° 42' 56"	RT 24 GL 20	09-Apr-04 28-Apr-04	2,684 2,684	Plugged and abandoned, dry.	NFW NFW
BEACH Myponga 1 PEL 95	Cooper/Eromanga	-28° 42' 49" 140° 10' 16"	RT 30 GL 25	15-Jun-04 21-Jun-04	1,470 1,470	Plugged and abandoned, dry.	NFW NFW
BEACH Noarlunga 1 PEL 95	Cooper	-28° 48' 38" 140° 28' 4"	RT 45 GL 40	28-Jun-04 07-Jul-04	1,539 1,539	Plugged and abandoned, dry.	NFW NFW
COOPER Acacia Grove 1 PEL 100	Cooper/Eromanga	-27° 8' 8" 140° 40' 0"	RT 50 GL 45	18-Apr-04 06-May-04	2,724 2,724	Plugged and abandoned, dry.	NFW NFW
GREAT ARTESIAN Nutmeg 1 PEL 106	Cooper/Eromanga	-27° 48' 21" 139° 47' 38"	RT 126 GL 120	16-Jan-04 04-Feb-04	2,909 2,909	Cased and suspended as a gas producer.	NFW NFD
GREAT ARTESIAN Paranta 1 PEL 106	Cooper/Eromanga	-27° 49' 17" 139° 50' 6"	RT 36 GL 30	13-Feb-04 29-Feb-04	2,890 2,890	Plugged and abandoned, dry.	NFW NFW
GREAT ARTESIAN Paranta 1 ST1 PEL 106	Cooper/Eromanga	-27° 49' 17" 139° 50' 6"	RT 36 GL 30	05-Mar-04 24-Mar-04	3,013 3,013	Cased and suspended as an oil producer.	NFW NFD
GREAT ARTESIAN Smegsy 1 PEL 106	Cooper	-27° 55' 55" 139° 45' 44"	RT 42 GL 37	16-Jul-04 10-Aug-04	2,976 2,976	Cased and suspended as a gas producer.	NFW NFD
INNAMINCKA Crocus 1 PEL 101	Cooper	-27° 20' 34" 140° 32' 28"	RT 43.2 GL 38	30-Jul-04 25-Aug-04	3,349 3,349	Cased and suspended as a gas producer.	NFW NFD

APPENDIX A (cont'd)

Operator Well Permit	Basin	Location	Elevation	Spudded TD reached	Final TD Metres drilled	Well remark	Classi- fication
SOUTH AUSTRALIA							
INNAMINCKA Cummin 1 PEL 103	Cooper/Eromanga	-27° 29' 19" 140° 54' 7"	RT 104.6 GL 99.1	07-Feb-04 19-Feb-04	2,068 2,068	Plugged and abandoned, dry.	NFW NFW
INNAMINCKA Flax 1 PEL 103	Cooper/Eromanga	-27° 22' 37" 140° 49' 2"	RT 99.1 GL 94.4	12-Jan-04 29-Jan-04	2,800 2,800	Cased and suspended as an oil and gas producer.	NFW NFD
INNAMINCKA Juniper 1 PEL 103	Cooper	-27° 24' 13" 140° 52' 6"	RT 115 GL 110	04-Oct-04 24-Oct-04	2,728 2,728	Cased and suspended as an oil producer.	NFW NFD
INNAMINCKA Willowie 1 PEL 103	Cooper	-27° 24' 49" 140° 47' 37"	RT 90 GL 85	07-Sep-04 21-Sep-04	2,816 2,816	Plugged and abandoned, dry.	NFW NFD
INNAMINCKA Yarrow 1 PEL 103	Cooper/Eromanga	-27° 20' 1" 140° 47' 52"	RT 89.1 GL 84.4	10-Dec-03 02-Jan-04	2,785 2,785	Cased and suspended as a gas producer.	NFW NFD
INNAMINCKA Yarrow 2 PEL 103	Cooper	-27° 20' 35" 140° 48' 19"	RT 108.6 GL 103.8	05-Jul-04 23-Jul-04	2,805 2,805	Plugged and abandoned, dry.	EXT EXT
SANTOS Big Lake 76 PPL16	Cooper/Eromanga	-28° 12' 57" 140° 19' 23"	RT 36.1 GL 30.1	01-Feb-04 03-Mar-04	2,992 2,992	Cased and suspended as a gas producer.	DEV DEV
SANTOS Big Lake 77 PPL 11	Cooper/Eromanga	-28° 13' 38" 140° 17' 3"	RT 39 GL 33	15-Mar-04 31-Mar-04	2,979 2,979	Completed as a gas producer.	DEV DEV
SANTOS Big Lake 78 PPL 11	Cooper	-28° 16' 32" 140° 13' 17"	RT 38 GL 33	30-Dec-04 Drilling ahead	- 3,048		DEV -
SANTOS Caladan 4 PPL75	Cooper	-28° 13' 9" 139° 55' 6"	RT 34.8 GL 30.8	27-Apr-04 12-May-04	1,832 1,832	Plugged and abandoned, dry.	EXT EXT
SANTOS Caladan North 1 PPL157	Cooper	-28° 12' 4" 139° 55' 18"	RT 33.4 -	26-Nov-04 09-Dec-04	2,180 2,180	Plugged and abandoned, dry.	NFW NFW
SANTOS Coonatie 5 PPL131	Cooper/Eromanga	-27° 28' 17" 140° 20' 32"	RT 53.3 GL 46.6	08-Jun-04 29-Jun-04	3,049 3,049	Cased and suspended as a gas producer.	DEV DEV
SANTOS Cosmo West 1 PPL117	Cooper	-27° 47' 24" 141° 50' 6"	RT 72 GL 67	09-Nov-04 22-Nov-04	2,610 2,610	Cased and suspended as a gas producer.	NFW NFD
SANTOS Derrilyn 1 PPL113	Cooper/Eromanga	-28° 31' 8" 140° 15' 15"	RT 38.1 GL 33.8	17-May-04 27-May-04	1,615 1,615	Cased and suspended as an oil producer.	NFW NFD
SANTOS Fly Lake 10 PPL 18	Cooper	-27° 36' 58" 139° 59' 28"	RT 35.8 GL 29.9	07-Jul-04 22-Jul-04	2,940 2,940	Cased and suspended as an oil producer.	DEV DEV
SANTOS Fly Lake 12 PPL18	Cooper	-27° 35' 58" 140° 0' 14"	RT 35.9 GL 30	26-Jul-04 10-Aug-04	2,978 2,978	Cased and suspended as an oil and gas producer.	DEV DEV

APPENDIX A (cont'd)

Operator Well Permit	Basin	Location	Elevation	Spudded TD reached	Final TD Metres drilled	Well remark	Classi- fication
SOUTH AUSTRALIA							
SANTOS Fly Lake 13 PPL18	Cooper	-27° 37' 45" 139° 58' 6"	RT 36 GL 30	14-Aug-04 26-Aug-04	2,950 2,950	Plugged and abandoned, dry.	DEV DEV
SANTOS Gidgealpa 58 PPL 6	Cooper/Eromanga	-27° 55' 58" 140° 2' 56"	RT 43.8 GL 38.1	13-Feb-04 04-Mar-04	2,047 2,047	Completed as an oil producer.	DEV DEV
SANTOS Kidman North 3 PPL 11	Cooper/Eromanga	-28° 12' 8" 140° 48' 19"	RT 39 GL 33	10-Apr-04 22-Apr-04	2,323 2,323	Cased and suspended as a gas producer.	DEV DEV
SANTOS Marabooka 8 PPL22	Cooper	-28° 11' 30" 140° 37' 0"	RT 54.7 GL 49.6	09-Jul-04 15-Jul-04	1,252 1,252	Cased and suspended as a gas producer.	DEV DEV
SANTOS Merrimelia 44 PPL17	Cooper/Eromanga	-27° 44' 39" 140° 9' 34"	RT 42.5 GL 38.4	09-Mar-04 01-Apr-04	1,993 1,993	Cased and suspended as an oil producer.	DEV DEV
SANTOS Merrimelia 45 PPL17	Cooper/Eromanga	-27° 44' 10" 140° 10' 26"	RT 47 GL 42	12-May-04 26-May-04	2,217 2,217	Cased and suspended as an oil producer.	EXT NPD
SANTOS Merrimelia 46 PPL17	Cooper	-27° 44' 4" 140° 11' 3"	RT 39.9 GL 34.8	20-Jun-04 30-Jun-04	1,934 1,934	Cased and suspended as an oil producer.	DEV DEV
SANTOS Merrimelia 47 PPL17	Cooper/Eromanga	-27° 44' 6" 140° 10' 41"	RT 39.5 GL 35.5	09-Jun-04 17-Jun-04	1,365 1,365	Cased and suspended as an oil producer.	DEV DEV
SANTOS Merrimelia 48 PPL17	Cooper	-27° 44' 28" 140° 10' 41"	RT 40.3 GL 36.2	02-Jul-04 15-Jul-04	1,656 1,656	Cased and suspended as an oil producer.	DEV DEV
SANTOS Merrimelia 49 PPL17	Cooper	-27° 44' 4" 140° 11' 20"	RT 38.5 GL 34.5	13-Jul-04 22-Jul-04	1,654 1,654	Cased and suspended as an oil producer.	DEV DEV
SANTOS Merrimelia 50 PPL17	Cooper	-27° 42' 6" 140° 11' 20"	RT 46.7 GL 42.7	24-Jul-04 29-Jul-04	1,653 1,653	Cased and suspended as an oil and gas producer.	DEV DEV
SANTOS Merrimelia 51 PPL17	Cooper	-27° 43' 32" 140° 11' 19"	RT 39.5 GL 35.5	19-Jun-04 30-Jun-04	1,923 1,923	Cased and suspended as an oil producer.	DEV DEV
SANTOS Merrimelia 52 PPL17	Cooper/Eromanga	-27° 45' 50" 140° 8' 55"	RT 40.5 GL 35	02-Jun-04 15-Jun-04	1,979 1,979	Plugged and abandoned, dry.	EXT EXT
SANTOS Millswood 1 PPL143	Cooper/Eromanga	-28° 10' 32" 139° 55' 32"	RT 41.3 GL 37.3	05-Apr-04 22-Apr-04	2,083 2,083	Cased and suspended as a gas producer.	NFW NFD
SANTOS Moolion 3 PPL167	Cooper/Eromanga	-27° 24' 55" 140° 12' 37"	RT 41.9 GL 36	21-May-04 02-Jun-04	2,932 2,932	Cased and suspended as a gas producer.	DEV DEV
SANTOS Nephrite South 4 PPL140	Cooper/Eromanga	-27° 54' 8" 139° 52' 48"	RT 31.7 GL 26.6	23-Apr-04 05-May-04	3,039 3,039	Cased and suspended as a gas producer.	DEV DEV

APPENDIX A (cont'd)

Operator Well Permit	Basin	Location	Elevation	Spudded TD reached	Final TD Metres drilled	Well remark	Classi- fication
SOUTH AUSTRALIA							
SANTOS Raven 3 PPL150	Cooper/Eromanga	-28° 2' 45" 139° 43' 51"	RT 28 GL 23	04-Apr-04 15-Apr-04	2,681 2,681	Cased and suspended as a gas producer.	DEV DEV
SANTOS Reg Sprigg 3 PPL182	Cooper/Eromanga	-27° 14' 21" 140° 57' 12"	RT 134.4 GL 128.9	27-Feb-04 11-Mar-04	2,419 2,419	Cased and suspended as an oil and gas producer.	EXT EXT
SANTOS Reg Sprigg West 1 PPL194	Cooper/Eromanga	-27° 14' 36" 140° 56' 18"	RT 126.1 GL 121.4	16-May-04 27-May-04	2,359 2,359	Completed as an oil producer.	NFW NFD
SANTOS Strzelecki 29	Cooper/Eromanga	NA NA	NA -	28-Apr-04 04-May-04	1,982 1,982	Cased and suspended as a gas producer.	DEV DEV
SANTOS Swan Lake 7 PPL101	Cooper/Eromanga	-27° 51' 19" 140° 7' 19"	RT 39.7 GL 34.7	10-Mar-04 25-Mar-04	3,076 3,076	Cased and suspended as a gas producer.	DEV DEV
SANTOS Venus 1 PPL17	Cooper	-27° 45' 50" 140° 11' 33"	RT 46.8 GL 40.9	31-Aug-04 15-Sep-04	2,872 2,872	Plugged and abandoned, dry.	NFW NFW
SANTOS Winninia North 3 PPL117	Eromanga	-27° 49' 34" 141° 52' 44"	RT 72.3 GL 84.7	19-Sep-04 27-Sep-04	2,454 2,454	Cased and suspended as a gas producer.	DEV DEV
SANTOS Wirrarie East 1 PPL175	Cooper	-28° 13' 59" 139° 55' 18"	RT 35.2 GL 29.6	16-Dec-04 Drilling ahead	- 2,179		EXT -
STUART Arwon 1 PEL 93	Cooper	-28° 24' 20" 139° 50' 2"	RT 34 GL 30	23-Sep-04 01-Nov-04	1,846 1,846	Cased and suspended as an oil producer.	NFW NFD
STUART Beeville 1 PEL 105	Eromanga	-27° 38' 23" 140° 18' 56"	RT 43 GL 38	03-Nov-04 28-Nov-04	2,270 2,270	Plugged and abandoned, dry.	NFW NFD
STUART Harpoono 1 PEL 113	Cooper/Eromanga	-28° 37' 2" 140° 6' 47"	RT 32 GL 27	24-May-04 11-Jun-04	1,500 1,500	Cased and suspended as an oil producer.	NFW NFD
STUART Saintly 1 PEL 113	Cooper/Eromanga	-28° 33' 46" 140° 13' 14"	RT 33 GL 28	07-May-04 18-May-04	1,665 1,665	Plugged and abandoned, dry.	NFW NFW
STUART Warrior 2 PEL 93	Cooper	-28° 24' 59" 139° 48' 40"	RT 36 GL 32	23-Aug-04 10-Sep-04	1,751 1,751	Completed as an oil producer.	DEV DEV
STUART PETROLEUM Galilee 1 PEL 90	Cooper/Eromanga	-27° 11' 30" 140° 54' 21"	RT 99 GL 94	22-Mar-04 09-Apr-04	2,737 2,737	Plugged and abandoned, dry.	NFW NFD
STUART PETROLEUM Jezebel 1 PEL 113	Cooper	-28° 37' 46" 140° 5' 39"	RT 30 GL 26	16-Nov-04 25-Nov-04	1,486 1,486	Plugged and abandoned, dry.	NFW NFW
VICTORIA PETROLEUM Canberra 1 PEL 115	Cooper	-28° 28' 54" 140° 40' 39"	RT 60 GL 55	26-Oct-04 28-Oct-04	924 924	Plugged and abandoned, dry.	NFW NFW

APPENDIX A (cont'd)

Operator Well Permit	Basin	Location	Elevation	Spudded TD reached	Final TD Metres drilled	Well remark	Classi- fication
SOUTH AUSTRALIA							
VICTORIA PETROLEUM Canberra 1 ST1 PEL 115	Cooper	-28° 28' 54" 140° 40' 39"	RT 60 GL 55	01-Nov-04 02-Nov-04	551	Plugged and abandoned, dry.	NFW NFW
VICTORIA PETROLEUM Canberra 1A PEL 93	Cooper	NA NA	RT 60 GL 55	09-Nov-04 27-Nov-04	2,555 2,555	Plugged and abandoned, dry.	NFW NFW
VICTORIA PETROLEUM Hornet 1 PEL 115	Cooper	-28° 17' 9" 140° 52' 46"	RT 60 GL 70	24-Aug-04 20-Sep-04	2,727 2,727	Cased and suspended as a gas producer.	NFW NFD
VICTORIA PETROLEUM Mirage 1 PEL 115	Eromanga	-28° 32' 57" 140° 43' 6"	RT 64 GL 60	06-Dec-04 20-Dec-04	1,975 1,975	Completed as an oil producer.	NFW NFD
VICTORIA PETROLEUM Ventura 1 PEL 115	Eromanga	-28° 32' 18" 140° 40' 25"	RT 57 GL 52	05-Oct-04 19-Oct-04	1,984 1,984	Completed as an oil producer.	NFW NFD

METRES DRILLED - SOUTH AUSTRALIA

Wells	Onshore	Offshore	Total
Exploration	86,864	-	86,864
Development	53,603	-	53,603
Total	140,467	-	140,467

WESTERN AUSTRALIA

AMITY Whicher Range 5 EP 408	Perth	-33° 50' 54" 115° 21' 37"	RT 134.3 GL 124.8	11-Oct-03 06-Jan-04	4,032 4,032	Plugged and abandoned, dry.	DEV DEV
AMITY Whicher Range 5 ST1 EP 408	Perth	-33° 50' 54" 115° 21' 37"	RT 134.3 GL 124.8	24-Dec-03 16-Jan-04	4,307 322	Cased and suspended as a gas producer.	DEV DEV
ANTRIM South Galapagos 1 WA-306-P	Browse	-15° 53' 38" 120° 43' 41"	RT 26.3 WD -342	05-Oct-04 24-Oct-04	3,636 3,636	Plugged and abandoned, dry.	NFW NFW
APACHE Ajax 1 WA-1-P R6	Carnarvon	-19° 36' 60" 116° 41' 59"	RT 32 WD -55	27-Dec-03 15-Jan-04	3,350 3,350	Plugged and abandoned, dry.	NFW NFW
APACHE Bambra 5H TL/1	Carnarvon	-20° 33' 58" 115° 37' 21"	RT 32 WD -23	15-Jul-04 06-Aug-04	5,155 5,155	Completed as a gas producer.	DEV DEV
APACHE Bambra 5H L1 TL/1	Carnarvon	-20° 33' 58" 115° 37' 21"	RT 32 WD -23	15-Jul-04 06-Aug-04	5,100 600	Completed as a gas producer.	DEV DEV
APACHE Bambra 6 TL/1	Carnarvon	-20° 34' 31" 115° 38' 15"	RT 24 WD -24	23-Aug-04 03-Oct-04	3,230 3,230	Plugged and abandoned, dry.	DEV DEV
APACHE Black Dragon 1 WA-335-P	Carnarvon	-21° 16' 13" 113° 22' 28"	RT 26 WD -1280	10-Mar-04 13-Apr-04	2,640 2,640	Plugged and abandoned, dry.	NFW NFW

APPENDIX A (cont'd)

Operator Well Permit	Basin	Location	Elevation	Spudded TD reached	Final TD Metres drilled	Well remark	Classi- fication
WESTERN AUSTRALIA							
APACHE Blackthorn 1 TP/ 7 R2	Carnarvon	-21° 20' 15" 115° 7' 49"	RT 31.3 WD -15	29-Mar-04 31-Mar-04	1,425 1,425	Plugged and abandoned, dry.	EXT EXT
APACHE East Spar 1 DW1 WA-13-L	Carnarvon	-20° 42' 28" 114° 58' 47"	NA WD -95	15-Apr-04 22-Apr-04	2,910 782	Plugged and abandoned, dry.	DEV DEV
APACHE East Spar 1 DW2 WA-13-L	Carnarvon	-20° 42' 28" 114° 58' 47"	NA WD -95	25-Apr-04 29-Apr-04	4,168 2,663	Cased and suspended as a gas producer.	DEV DEV
APACHE East Spar 9 WA-13-L	Carnarvon	-20° 38' 60" 114° 59' 12"	RT 25 WD -97.1	12-Nov-04 22-Nov-04	2,604 2,604	Cased and suspended as a gas producer.	DEV DEV
APACHE Gauguin 1 TL/1	Carnarvon	-20° 38' 50" 115° 36' 19"	RT 32 WD -17	25-Apr-04 29-Apr-04	2,085 2,085	Plugged and abandoned, dry.	NFW NFW
APACHE Gudrun 2 TL/1	Carnarvon	-20° 36' 8" 115° 36' 51"	RT 39 WD -24.3	21-Jan-04 29-Jan-04	4,088 4,088	Completed as an oil producer.	DEV DEV
APACHE Gungurru 1 WA-202-P R2	Carnarvon	-20° 2' 46" 116° 29' 5"	RT 32 WD -61	04-Jul-04 09-Jul-04	1,235 1,235	Plugged and abandoned, dry.	NFW NFW
APACHE Kadinsky 1 TL/1	Carnarvon	-20° 38' 50" 115° 36' 19"	RT 32 WD -17	18-Apr-04 23-Apr-04	3,000 3,000	Plugged and abandoned, dry.	NFW NFW
APACHE Linda 3 TL/1	Carnarvon	-20° 33' 19" 115° 42' 32"	RT 40 WD -32	03-Mar-04 15-Mar-04	3,173 3,173	Completed as a gas producer.	DEV DEV
APACHE Monet 1 TL/1	Carnarvon	-20° 38' 50" 115° 36' 19"	RT 32 WD -17	13-Apr-04 17-Apr-04	2,242 2,242	Plugged and abandoned, dry.	NFW NFD
APACHE Monet 2H TL/1	Carnarvon	-20° 40' 24" 115° 35' 6"	RT 29 WD -8	12-Jun-04 20-Jun-04	3,915 3,915	Completed as an oil producer.	DEV DEV
APACHE Muggles 1 WA-254-P	Carnarvon	-19° 47' 21" 116° 44' 56"	RT 22 WD -73	29-Jun-04 04-Jul-04	1,600 1,600	Plugged and abandoned, dry.	NFW NFW
APACHE Rugborne 1 EP 363 R2	Carnarvon	-20° 43' 40" 115° 42' 42"	RT 32 WD -22	13-Feb-04 15-Feb-04	1,230 1,230	Plugged and abandoned, dry.	NFW NFW
APACHE South Plato 4 TL/6	Carnarvon	-20° 41' 57" 115° 33' 52"	RT 30 WD -8	08-Apr-04 10-Apr-04	2,097 2,097	Plugged and abandoned, dry.	DEV DEV
APACHE Stag 26H WA-15-L	Carnarvon	-27° 17' 24" 116° 16' 31"	RT 56 WD -49	22-Oct-04 01-Nov-04	2,326 2,326	Completed as an oil producer.	DEV DEV
APACHE Stag 27H WA-15-L	Carnarvon	-27° 17' 24" 116° 16' 31"	RT 54 WD -49	09-Nov-04 13-Nov-04	1,162 1,162	Completed as an oil producer.	DEV DEV

APPENDIX A (cont'd)

Operator Well Permit	Basin	Location	Elevation	Spudded TD reached	Final TD Metres drilled	Well remark	Classi- fication
WESTERN AUSTRALIA							
APACHE Stag 28H WA-15-L	Carnarvon	-20° 17' 24" 116° 16' 31"	NA WD -49	15-Nov-04 24-Nov-04	2,326 2,326	Completed as an oil producer.	DEV DEV
APACHE Taunton 4 TP/ 7 R2	Carnarvon	-21° 20' 12" 115° 5' 42"	RT 30.4 WD -15	23-Mar-04 26-Mar-04	1,410 1,410	Plugged and abandoned, dry.	EXT EXT
ARC ENERGY Agonis 1 L-1	Perth	-29° 18' 39" 115° 6' 13"	RT 40 GL 45.2	01-Jul-04 28-Jul-04	2,915 2,915	Cased and suspended as a gas producer.	NFW NFD
ARC ENERGY Apium 1 L 1 R1	Perth	-29° 18' 57" 115° 4' 16"	RT 112.4 GL 107.2	20-May-04 12-Jun-04	2,860 2,860	Cased and suspended as an oil and gas producer.	NFW NFD
ARC ENERGY Centella 1 L 1 R1	Perth	-29° 18' 2" 115° 6' 12"	RT 50.2 GL 45	05-Aug-04 28-Aug-04	3,054 3,054	Cased and suspended as an oil producer.	NFW NFD
ARC ENERGY Dongara 31 L 2 R1	Perth	-29° 14' 7" 115° 1' 11"	RT 35.2 GL 30	04-Nov-04 15-Nov-04	1,690 1,690	Completed as a gas producer.	EXT EXT
ARC ENERGY Dongara 32 L 2 R1	Perth	-29° 14' 7" 115° 1' 12"	RT 30 GL 26	19-Dec-04 Drilling ahead	- 1,748		EXT -
ARC ENERGY Dongara 32 L1 L2	Perth	-29° 14' 7" 115° 1' 12"	RT 30 GL 26	19-Dec-04 Drilling ahead	- 93		EXT -
ARC ENERGY Eremia 2 ST1 L 1 R1	Perth	-29° 18' 41" 115° 1' 33"	RT 38.1 GL 31	03-Dec-03 07-Jan-04	2,385 1,576	Completed as an oil producer.	EXT EXT
ARC ENERGY Eremia 3 L 1 R1	Perth	-29° 18' 38" 115° 0' 60"	RT 31.8 GL 26.6	26-Nov-04 05-Dec-04	2,216 2,216	Plugged and abandoned, dry.	EXT EXT
ARC ENERGY Eremia 4 L 1 R1	Perth	-29° 18' 38" 115° 0' 60"	RT 31.8 GL 26.6	26-Nov-04 05-Dec-04	2,273 2,273	Completed as an oil producer.	EXT SRV
ARC ENERGY Hovea 11 L 1 R1	Perth	-29° 19' 6" 115° 2' 34"	RT 63.8 GL 58.6	12-Sep-04 21-Sep-04	2,253 2,253	Cased and suspended as an oil producer.	DEV DEV
ARC ENERGY Kingia 1 L 1	Perth	-29° 23' 33" 115° 1' 44"	RT 33 GL 25	16-Jan-04 01-Feb-04	2,871 2,871	Plugged and abandoned, dry.	NFW NFW
ARC ENERGY Xyris 1 L 1 R1	Perth	-29° 18' 26" 115° 5' 33"	RT 45.5 GL 40.2	13-Mar-04 04-Apr-04	2,795 2,795	Completed as a gas producer.	NFW NFD
BHP BILLITON Crosby 2 WA-12-R	Carnarvon	-21° 30' 40" 114° 7' 7"	RT 26 WD -223	31-May-04 06-Jun-04	1,718 1,718	Plugged and abandoned, dry.	EXT EXT
BHP BILLITON Crosby 2 ST1 WA-12-R	Carnarvon	-21° 30' 40" 114° 7' 7"	RT 26 WD -223	07-Jun-04 09-Jun-04	1,207 207	Plugged and abandoned, dry.	EXT EXT

APPENDIX A (cont'd)

Operator Well Permit	Basin	Location	Elevation	Spudded TD reached	Final TD Metres drilled	Well remark	Classi- fication
WESTERN AUSTRALIA							
BHP BILLITON Eskdale 2 WA-255-P R1	Carnarvon	-21° 22' 32" 113° 48' 31"	RT 26 WD -830	19-Apr-04 06-May-04	2,942 2,942	Plugged and abandoned, dry.	NFW NFD
BHP BILLITON Harrison 1 WA-12-R	Carnarvon	-21° 31' 43" 114° 7' 7"	RT 26 WD -192	22-May-04 26-May-04	1,600 1,600	Plugged and abandoned, dry.	NFW NFD
BHP BILLITON Knott 1 WA-255-P	Carnarvon	-21° 28' 48" 113° 54' 42"	RT 26 WD -681	28-Jun-04 06-Jul-04	2,212 2,212	Plugged and abandoned, dry.	NFW NFW
BHP BILLITON Ravensworth 2 WA-12-R	Carnarvon	-21° 30' 39" 114° 5' 33"	RT 26 WD -210	14-Jun-04 17-Jun-04	1,459 1,459	Plugged and abandoned, dry.	EXT EXT
BHP BILLITON Ravensworth 2 ST1 WA-12-R	Carnarvon	-21° 30' 39" 114° 5' 33"	RT 26 WD -210	19-Jun-04 20-Jun-04	1,227 227	Completed as an oil producer.	EXT EXT
BHP BILLITON Scarborough 3 WA-1-R R2	Carnarvon	-19° 54' 57" 113° 13' 34"	RT 22 WD -939	09-Dec-04 17-Dec-04	2,122 2,122	Plugged and abandoned, dry.	EXT EXT
BHP BILLITON Scarborough 3 CH1 WA-1-R R2	Carnarvon	-19° 54' 57" 113° 13' 34"	RT 22 WD -939	24-Dec-04 Drilling ahead	- 1,964		EXT -
BHP BILLITON Scindian 4 WA-10-L	Carnarvon	-21° 11' 30" 114° 41' 52"	RT 26 WD -121	23-Jan-04 24-Feb-04	3,747 1,320	Completed as an oil producer.	DEV DEV
BHP BILLITON Stickle 1 WA-12-R	Carnarvon	-21° 31' 19" 114° 7' 42"	RT 26 WD -194	08-May-04 15-May-04	1,648 1,648	Plugged and abandoned, dry.	NFW NFD
BHP BILLITON Stickle 1 DW1 WA-12-R	Carnarvon	-21° 31' 19" 114° 7' 42"	RT 26 WD -194	16-May-04 18-May-04	1,179 149	Plugged and abandoned, dry.	NFW NFW
BHP BILLITON Stickle 1 DW2 WA-12-R	Carnarvon	-21° 31' 19" 114° 7' 42"	RT 26 WD -194	19-May-04 20-May-04	1,116 86	Plugged and abandoned, dry.	NFW NFW
BHP BILLITON Stickle 2 WA-12-R	Carnarvon	-21° 30' 20" 114° 8' 28"	RT 22 WD -191.5	30-Jul-04 05-Aug-04	1,408 1,408	Plugged and abandoned, dry.	EXT EXT
BHP BILLITON Stickle 2 CH1 WA-12-R	Carnarvon	-21° 30' 20" 114° 8' 28"	RT 22 WD -191.5	08-Aug-04 10-Aug-04	1,213 130	Plugged and abandoned, dry.	EXT EXT
BHP BILLITON Stickle 3 WA-12-R	Carnarvon	-21° 30' 20" 114° 8' 28"	RT 22 WD -191.5	12-Aug-04 14-Aug-04	1,734 1,734	Plugged and abandoned, dry.	EXT EXT
BHP BILLITON Stybarrow 3 WA-255-P	Carnarvon	-21° 27' 54" 113° 50' 60"	RT 26 WD -790	18-May-04 01-Jun-04	2,522 2,522	Plugged and abandoned, dry.	EXT EXT
BHP BILLITON Stybarrow 4 WA-255-P	Carnarvon	-21° 27' 54" 113° 50' 60"	RT 22 WD -792	04-Jun-04 22-Jun-04	2,500 2,500	Plugged and abandoned, dry.	EXT EXT

APPENDIX A (cont'd)

Operator Well Permit	Basin	Location	Elevation	Spudded TD reached	Final TD Metres drilled	Well remark	Classi- fication
WESTERN AUSTRALIA							
CHEVRONTEXACO Wheatstone 1 WA-17-R	Carnarvon	-19° 50' 58" 115° 16' 31"	RT 26.3 WD -216	23-Jul-04 06-Aug-04	3,410 3,410	Plugged and abandoned, dry.	NFW NFD
ENI Scalybutt 1 WA-25-L	Carnarvon	-20° 55' 4" 114° 53' 27"	RT 26 WD -130	26-Jun-04 15-Jul-04	2,886 2,886	Plugged and abandoned, dry.	EXT EXT
ENI Woollybutt 4 WA-234-P	Carnarvon	-20° 57' 16" 114° 52' 6"	RT 26 WD -130.5	18-Dec-04 Drilling ahead	- 2,900		DEV -
INPEX Ichthys 2A ST1 WA-285-P	Browse	-13° 54' 0" 123° 9' 30"	RT 25 WD -270.5	16-Dec-03 09-Jan-04	4,177 2,662	Plugged and abandoned, dry.	EXT EXT
INPEX Ichthys 2A ST2 WA-285-P	Browse	-13° 54' 0" 123° 9' 30"	RT 25 WD -270.5	22-Jan-04 08-Feb-04	4,752 695	Plugged and abandoned, dry.	EXT EXT
ORIGIN Fiddich 1 WA-226-P R2	Perth	-27° 19' 39" 113° 3' 25"	RT 26.3 WD -160	02-Dec-04 09-Dec-04	1,341 1,341	Plugged and abandoned, dry.	NFW NFW
ORIGIN Jingemia 4 EP 413 R1	Perth	-29° 20' 15" 114° 59' 36"	RT 35.9 GL 28	23-Apr-04 09-May-04	2,522 2,522	Cased and suspended as an oil producer.	DEV DEV
ORIGIN Redback 1 L 11	Perth	-29° 27' 28" 115° 9' 44"	RT 72.6 GL 64.7	11-Feb-04 14-Mar-04	3,796 3,796	Cased and suspended as an dry producer.	NFW NFD
ORIGIN Tarantula 1 L 11	Perth	-29° 25' 21" 115° 8' 19"	RT 58.5 GL 51.5	24-May-04 10-Jun-04	3,221 3,221	Plugged and abandoned, dry.	NFW NFD
SANTOS Bounty 2 WA-191-P R3	Carnarvon	-19° 16' 59" 116° 38' 41"	RT 22 WD -152	17-Jan-04 08-Feb-04	3,811 3,811	Plugged and abandoned, dry.	EXT EXT
SANTOS Bounty 2 DW1 WA-191-P R3	Carnarvon	-19° 16' 59" 116° 38' 41"	RT 22 WD -152	15-Feb-04 20-Feb-04	3,807 1,331	Plugged and abandoned, dry.	EXT EXT
SANTOS Corowa East 1A WA-264-P R1	Carnarvon	-21° 29' 5" 114° 34' 59"	RT 32.4 WD -82.8	04-Feb-04 10-Feb-04	1,670 1,670	Plugged and abandoned, dry.	NFW NFW
SANTOS Exeter 4 WA-191-P R3	Carnarvon	-19° 19' 6" 116° 34' 0"	RT 22 WD -147	25-Feb-04 28-Feb-04	1,959 1,959	Plugged and abandoned, dry.	DEV DEV
SANTOS Exeter 4A WA-191-P R3	Carnarvon	-19° 18' 37" 116° 33' 40"	RT 22 WD -147	03-Mar-04 17-May-04	3,961 3,961	Cased and suspended as an oil producer.	DEV DEV
SANTOS Exeter 5 WA-191-P R3	Carnarvon	-19° 18' 37" 116° 33' 40"	RT 26 WD -147	04-Mar-04 07-Apr-04	2,700 2,700	Plugged and abandoned, dry.	DEV DEV
SANTOS Exeter 5 ST1 WA-191-P R3	Carnarvon	-19° 18' 37" 116° 33' 40"	RT 22 WD -147	10-Apr-04 21-Apr-04	3,454 863	Plugged and abandoned, dry.	DEV DEV

APPENDIX A (cont'd)

Operator Well Permit	Basin	Location	Elevation	Spudded TD reached	Final TD Metres drilled	Well remark	Classi- fication
WESTERN AUSTRALIA							
SANTOS Exeter 5H WA-191-P R3	Carnarvon	-19° 18' 37" 116° 33' 40"	RT 22 WD -147	25-Apr-04 25-Apr-04	2,135 46	Plugged and abandoned, dry.	DEV DEV
SANTOS Exeter 6 WA-191-P R3	Carnarvon	-19° 18' 37" 116° 33' 40"	RT 22 WD -147	31-May-04 04-Jun-04	3,235 1,163	Plugged and abandoned, dry.	DEV DEV
SANTOS Mutineer 4 WA-26-L	Carnarvon	-19° 15' 32" 116° 38' 15"	RT 22.2 WD -161.8	09-Jun-04 23-Sep-04	3,965 3,965	Completed as an oil producer.	DEV DEV
SANTOS Mutineer 5 WA-191-P	Carnarvon	-19° 15' 32" 116° 38' 15"	RT 22.2 WD -149.9	15-Jun-04 16-Sep-04	4,736 4,736	Completed as an oil producer.	DEV DEV
SANTOS Mutineer 6 WA-191-P	Carnarvon	-19° 15' 32" 116° 38' 15"	RT 22.2 WD -161.8	20-Jun-04 24-Jun-04	2,082 2,082	Cased and suspended as an dry producer.	DEV DEV
SANTOS Mutineer 7 WA-191-P	Carnarvon	-19° 15' 32" 116° 38' 15"	RT 22.2 WD -161.8	26-Jun-04 24-Jul-04	4,566 4,566	Plugged and abandoned, dry.	DEV DEV
SANTOS Mutineer 8 WA-191-P	Carnarvon	-19° 15' 32" 116° 38' 15"	RT 22.2 WD -161.8	14-Aug-04 17-Aug-04	3,837 1,822	Plugged and abandoned, dry.	DEV DEV
SANTOS Mutineer 9 WA-191-P	Carnarvon	-19° 15' 33" 116° 38' 16"	RT 22.2 WD -161.8	03-Sep-04 05-Sep-04	3,315 1,295	Plugged and abandoned, dry.	DEV DEV
SANTOS Mutineer 9H WA-191-P	Carnarvon	-19° 15' 32" 116° 38' 15"	RT 22.2 WD -161.8	28-Sep-04 09-Oct-04	3,810 1,810	Completed as an oil producer.	DEV DEV
SANTOS Mutineer 10 WA-26-L	Carnarvon	-19° 15' 41" 116° 39' 2"	RT 22 WD -159	29-Dec-04 Drilling ahead	- 3,506		EXT -
SANTOS Norfolk North 1 WA-26-L	Carnarvon	-19° 13' 49" 116° 39' 43"	RT 22 WD -172	12-Dec-04 23-Dec-04	3,471 3,471	Plugged and abandoned, dry.	EXT EXT
SANTOS Xyris South 1 L 1 R1	Perth	-29° 18' 20" 115° 5' 26"	RT 45 GL 41	10-Oct-04 24-Oct-04	2,933 2,933	Completed as a gas producer.	EXT EXT
STRIKE OIL Altostratus 1 TP/17	Carnarvon	-20° 25' 14" 115° 58' 26"	RT 32 WD -43	29-Nov-04 03-Dec-04	1,132 1,132	Plugged and abandoned, dry.	NFW NFD
TAP Boojum 1 TP/18	Carnarvon	-21° 14' 9" 115° 2' 11"	RT 32 WD -24	16-Dec-04 23-Dec-04	2,577 2,577	Plugged and abandoned, dry.	NFW NFD
TAP Cyrano 2 EP 364 R1	Carnarvon	-21° 12' 50" 115° 16' 45"	RT 33.3 WD -17	06-Dec-04 12-Dec-04	1,737 1,737	Plugged and abandoned, dry.	EXT EXT

APPENDIX A (cont'd)

Operator Well Permit	Basin	Location	Elevation	Spudded TD reached	Final TD Metres drilled	Well remark	Classi- fication
WESTERN AUSTRALIA							
VICTORIA INT Cooper 1	Carnarvon	-22° 5' 5" 114° 11' 45"	RT 30.65 WD -17	27-Dec-04 Drilling ahead	- 2,103		NFW -
EP 325 R2							
WOODSIDE Indian 1 WA-271-P R1	Carnarvon	-21° 30' 2" 113° 43' 51"	RT 22 WD -981	13-Jul-04 22-Jul-04	2,316 2,316	Plugged and abandoned, dry.	NFW NFW
WOODSIDE Lambert 6 WA-16-L	Carnarvon	-19° 26' 57" 116° 29' 17"	RT 22.4 WD -126.6	10-Oct-04 19-Nov-04	3,674 3,674	Completed as an oil producer.	DEV DEV
WOODSIDE Legendre North 5H WA-20-L	Carnarvon	-19° 42' 12" 116° 42' 30"	RT 47.51 WD -51	10-May-04 30-May-04	3,479 3,479	Completed as an oil producer.	DEV DEV
WOODSIDE Polkadot 1 WA-313-P	Bonaparte	-13° 37' 7" 128° 29' 1"	RT 26.4 WD -65	28-Aug-04 09-Sep-04	3,791 3,791	Plugged and abandoned, dry.	EXT EXT
WOODSIDE Wanaea 8 WA-9-L	Carnarvon	-19° 34' 41" 116° 26' 59"	RT 22 WD -81	23-Aug-04 17-Sep-04	3,600 3,600	Completed as an oil producer.	DEV DEV

METRES DRILLED - WESTERN AUSTRALIA

Wells	Onshore	Offshore	Total
Exploration	32,200	79,346	111,546
Development	9,129	77,162	86,291
Total	41,329	156,508	197,837

NORTHERN TERRITORY

MAGELLAN Palm Valley 11 PL 3	Amadeus	-24° 1' 1" 132° 37' 20"	NA -	03-Jun-04 17-Jun-04	770 770	Plugged and abandoned, dry.	DEV DEV
MAGELLAN Palm Valley 11 ST1 PL 3	Amadeus	-24° 1' 1" 132° 37' 20"	NA -	30-Jun-04 07-Jul-04	654 34	Plugged and abandoned, dry.	DEV DEV
MAGELLAN Palm Valley 11 ST2 PL 3	Amadeus	-24° 1' 1" 132° 37' 20"	NA -	08-Jul-04 08-Aug-04	2,214 1,597	Plugged and abandoned, dry.	DEV DEV
OMV Ponderosa 1 AC/P4	Bonaparte	-11° 51' 5" 124° 52' 60"	RT 25 WD -121.73	31-Dec-04 Drilling ahead	- 1,471		NFW -
SANTOS East Mereenie 43 OL5	Amadeus	-24° 0' 44" 131° 34' 38"	RT 792 GL 784	11-Oct-04 01-Nov-04	1,367 1,367	Completed as a gas producer.	DEV DEV
SANTOS West Mereenie 18 OL4	Amadeus	-23° 57' 7" 131° 25' 19"	RT 770 GL 763	11-Nov-04 25-Nov-04	1,218 1,218	Completed as a gas producer.	DEV DEV

APPENDIX A (cont'd)

Operator Well Permit	Basin	Location	Elevation	Spudded TD reached	Final TD Metres drilled	Well remark	Classi- fication
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NORTHERN TERRITORY

METRES DRILLED - NORTHERN TERRITORY

Wells	Onshore	Offshore	Total
Exploration	-	-	-
Development	4,986	-	4,986
Total	4,986	-	4,986

TERRITORY OF ASHMORE AND CARTIER

OMV Katandra 1 AC/P24	Bonaparte	-11° 47' 39" 125° 15' 52"	RT 25 WD -114.5	13-Dec-04 15-Dec-04	867 867	Plugged and abandoned, dry.	NFW NFW
OMV Katandra 1A AC/P24	Bonaparte	-11° 47' 41" 125° 15' 51"	RT 25 WD -114.5	20-Dec-04 26-Dec-04	1,450 1,450	Cased and suspended as an oil producer.	NFW NFD

METRES DRILLED - TERRITORY OF ASHMORE AND CARTIER

Wells	Onshore	Offshore	Total
Exploration	-	2,317	2,317
Development	-	-	-
Total	-	2,317	2,317

JOINT PETROLEUM DEVELOPMENT AREA

CONOCOPHILLIPS Bayu Undan D04 JPDA 91-12	Bonaparte	-11° 4' 51" 126° 37' 51"	RT 45.7 WD -78.3	22-Sep-03 01-Apr-04	4,419 4,419	Completed as a gas producer.	DEV DEV
CONOCOPHILLIPS Bayu Undan D05 JPDA 91-12	Bonaparte	-11° 4' 51" 126° 37' 51"	RT 45.7 WD -78.3	14-Sep-03 22-Oct-04	4,598 4,598	Plugged and abandoned, dry.	DEV DEV
CONOCOPHILLIPS Bayu Undan D05 ST1 JPDA 91-12	Bonaparte	-11° 4' 51" 126° 37' 51"	RT 45.7 WD -78.3	31-Oct-04 Drilling ahead	- 2,536		DEV -
CONOCOPHILLIPS Bayu Undan D06 ST1 JPDA 91-12	Bonaparte	-11° 4' 51" 126° 37' 51"	RT 45.7 WD -78.3	18-May-04 25-Jun-04	6,341 3,258	Completed as a gas producer.	DEV DEV
CONOCOPHILLIPS Bayu Undan D08 JPDA 91-12	Bonaparte	-11° 4' 51" 126° 37' 51"	RT 45.7 WD -78.3	16-Sep-03 02-Jan-04	4,573 4,573	Completed as a gas producer.	DEV DEV
CONOCOPHILLIPS Bayu Undan D09 JPDA 91-12	Bonaparte	-11° 4' 51" 126° 37' 51"	RT 45.7 WD -78.3	22-Sep-03 22-Feb-04	4,277 4,277	Completed as a gas producer.	DEV DEV
CONOCOPHILLIPS Bayu Undan D11 JPDA 91-12	Bonaparte	-11° 4' 51" 126° 37' 51"	RT 45.7 WD -78.3	17-Sep-03 21-Dec-04	6,633 6,633	Plugged and abandoned, dry.	DEV DEV

APPENDIX A (cont'd)

Operator Well Permit	Basin	Location	Elevation	Spudded TD reached	Final TD Metres drilled	Well remark	Classi- fication
JOINT PETROLEUM DEVELOPMENT AREA							
CONOCOPHILLIPS Bayu Undan D11 ST1 JPDA 91-12	Bonaparte	-11° 4' 51" 126° 37' 51"	RT 45.7 WD -78.3	22-Dec-04 Drilling ahead	- 2,830		DEV -
CONOCOPHILLIPS Bayu Undan D13 JPDA 91-12	Bonaparte	-11° 4' 51" 126° 37' 51"	RT 45.7 WD -78.3	18-Sep-03 10-Oct-04	2,533 2,533	Cased and suspended as an dry producer.	DEV DEV
CONOCOPHILLIPS Bayu Undan D14 JPDA 91-12	Bonaparte	-11° 4' 51" 126° 37' 51"	RT 45.7 WD -78.3	20-Sep-03 07-Jul-04	2,254 2,254	Plugged and abandoned, dry.	DEV DEV
CONOCOPHILLIPS Bayu Undan D14 ST1 JPDA 91-12	Bonaparte	-11° 4' 51" 126° 37' 51"	RT 45.7 WD -78.3	08-Jul-04 11-Jul-04	2,652 548	Plugged and abandoned, dry.	DEV DEV
CONOCOPHILLIPS Bayu Undan D14 ST2 JPDA 91-12	Bonaparte	-11° 4' 51" 126° 37' 51"	RT 45.7 WD -78.3	22-Jul-04 23-Jul-04	2,680 71	Plugged and abandoned, dry.	DEV DEV
CONOCOPHILLIPS Bayu Undan D14 ST3 JPDA 91-12	Bonaparte	-11° 4' 51" 126° 37' 51"	RT 45.7 WD -78.3	27-Jul-04 Drilling ahead	- 2,331		DEV -
CONOCOPHILLIPS Bayu Undan D15 JPDA 91-12	Bonaparte	-11° 4' 51" 126° 37' 51"	RT 45.7 WD -78.3	25-Jul-03 24-Jan-04	4,373 4,373	Completed as a gas producer.	DEV DEV

METRES DRILLED - JOINT PETROLEUM DEVELOPMENT AREA

Wells	Onshore	Offshore	Total
Exploration	-	-	-
Development	-	37,537	37,537
Total	-	37,537	37,537

* Assumed reference point

Metres drilled totals include only wells reaching total depth in the current period. Wells spudded in the current period but reaching total depth in a subsequent period will be included in the totals for that period.

Abbreviations (American Petroleum Institute standard definitions for petroleum statistics)

DEV	Development	NPD	New-pool discovery
DF	Drill floor	SPD	Shallower pool discovery
DRY	Not completed	RT	Rotary table
EXT	Extension	STR	Stratigraphic
GL	Ground level	SRV	Service
KB	Kelly bushing	TD	Total depth
NFD	New-field discovery	WD	Water depth
NFW	New-field wildcat		

Seismic survey activity by State, 2004

APPENDIX B: SEISMIC SURVEY ACTIVITY BY STATE, 2004

Operator	Contractor	Basin	Survey name	Type	Title	Km shot (sq. km)	Status
OFFSHORE							
NEW SOUTH WALES							
Bounty Oil & Gas NL	Fugro Geoteam	Sydney	BALEEN	2D	PEP 11	1,500	Completed
VICTORIA							
Essential Petroleum Resources Ltd	Multiwave Geophysical Company AS	Otway	OEP04 SOUTHERN MARGIN	2D	T/36P, VIC/P46, VIC/P50, EPP 33	1,108	Completed
SOUTH AUSTRALIA							
Kerr McGee NW Shelf Energy Australia Pty Ltd	Multiwave Geophysical Company AS	Otway	KMG 04	2D	EPP 33	1,258	Completed
Woodside Petroleum Ltd	Multiwave Geophysical Company AS	Duntroon	WHIDBY 2D	2D	EPP 31	1,756	Continuing
WESTERN AUSTRALIA							
AGIP	WesternGeco	Perth	APOLLO 3D	3D	WA-328-P	(617)	Completed
BHP Billiton (Australia) Pty Ltd	WesternGeco	Carnarvon	SCARBOROUGH	3D	WA-1-R R1	(1,266)	Completed
Chevron Texaco Australia Pty Ltd	Veritas	Carnarvon	BOLLINGER	2D	WA-268-P	19	Continuing
Chevron Texaco Australia Pty Ltd	Veritas	Carnarvon	IO JANSZ	3D	WA-18-R, WA15-R, WA-205-P R1, WA-253-P R1, WA-267-P	(2,786)	Completed
ChevronTexaco Australia Pty Ltd	Veritas	Carnarvon	CHANDON	3D	WA-268-P	(1,237)	Completed
Drillsearch Energy NL	Veritas	Bonaparte	BNDS04	2D	WA-318-P, WA-319-P	1,334	Completed
Geoscience Australia	Veritas	Bremer	SURVEY 280 MENTELLE BREMER ZEEYCK	2D		2,682	Completed
Roc Oil Company Limited	Multiwave Geophysical Company AS	Perth	MELISSA2D	2D	WA-349-P	369	Completed
Roc Oil Company Limited	Multiwave Geophysical Company AS	Perth	NAOMI 2D	2D	WA-286-P	170	Completed
ROC Oil Company Ltd	Multiwave Geophysical Company AS	Perth	FIONA 2D	2D	WA-325-P	132	Completed
Santos Ltd	Veritas	Browse	UNION	2D	WA-274-P, WA-281-P	2,030	Completed
Santos Offshore Pty Ltd	Veritas	Browse	KINGSHEAD	2D	WA-338-P	422	Completed
Woodside Energy Ltd	Veritas	Carnarvon	CAZADORES 2D	2D	WA-347-P, WA-348-P, WA-353-P	2,580	Completed

APPENDIX B (cont'd)

Operator	Contractor	Basin	Survey name	Type	Title	Km shot (sq. km)	Status
Woodside Energy Ltd	WesternGeco (A) Pty Ltd	Carnarvon	DEMETER 3D MSS	3D	WA-28-P R6, WA-208-P R2, WA-248-P, WA-303-P, WA-1-6, WA-9,11,16,17,23, WA-24-L, WA-10-R R1	(834)	Completed
Woodside Energy Ltd	WesternGeco	Carnarvon	PLUTO	3D	WA-350-P	(517)	Completed
Woodside Petroleum Ltd	WesternGeco	Carnarvon	ENFIELD	3D	WA-271-P	(82)	Completed
NORTHERN TERRITORY							
Nexus Energy (Aust.) NL	Veritas	Bonaparte	FOG BAY 2D	2D	NT/P66	3,300	Completed
Santos (NGA) Pty Ltd	Veritas	Bonaparte	SNT 04B	2D	NT/P48, NT/P61, NT/P68	623	Completed
Santos Offshore Pty Ltd	Veritas	Bonaparte	SNT 04	2D	NT/P67, NT/RL3	123	Completed
TERRITORY OF ASHMORE AND CARTIER ISLANDS ADJACENT AREA							
Hardman Oil and Gas Pty Ltd	Veritas	Bonaparte	RUFUS	2D	AC/P25, AC/L3, AC/RL1	429	Completed
Norwest Energy NL	Veritas	Bonaparte	LARA 2D	2D	AC/P32	125	Completed
ONSHORE							
QUEENSLAND							
Enterprise Energy Limited	Terrex Seismic	Cooper	PLANET DOWNS 2004	2D	ATP539P	90	Completed
Mosaic Oil NL	Velseis Pty Ltd	Surat	WAGGAMABA 3D	3D	PL202	(70)	Completed
Origin Energy CSG Ltd	Terrex Seismic	Surat	COMBABULA 2D	2D	ATP606P	49	Completed
Origin Energy CSG Ltd	Velseis Pty Ltd	Surat	MYALL CREEK 3D	3D	ATP375P, PL174	(108)	Completed
Santos	Terrex Seismic	Cooper	INNAMINCKA BLOCK	3D	ATP259P	(58)	Completed
Santos Ltd	Trace Energy	Cooper	CERBERUS	2D	ATP259P	25	Completed
Santos Ltd	Trace Energy	Cooper	NE MURTEREE HORST	3D	PL114	(73)	Completed
Santos Ltd	Trace Energy	Cooper	ROSENEATH / TICKALARA	3D	ATP259P	(429)	Completed
Santos Ltd	Terrex Seismic	Surat	SUNNYBANK	2D	ATP336P	80	Completed
Santos QNT Pty Ltd	Terrex Seismic	Cooper	BARYULAH SOUTH 3D	3D	ATP259P	(126)	Completed
Santos QNT Pty Ltd	Terrex Seismic	Cooper	MOON	2D	ATP267P	33	Completed
Santos QNT Pty Ltd	Terrex Seismic	Cooper	NOCKATUNGA THUNGO	3D	ATP267P	(247)	Completed
Santos QNT Pty Ltd	Terrex Seismic	Cooper	TALGEBERRY 3D	3D	ATP299P	(110)	Continuing

APPENDIX B (cont'd)

Operator	Contractor	Basin	Survey name	Type	Title	Km shot (sq. km)	Status
Santos QNT Pty Ltd	Terrex Seismic	Cooper	THETA	2D	ATP259P	29	Completed
NEW SOUTH WALES							
Eastern Star Gas Ltd	Terrex Seismic	Gunnedah	DAMPIER TOORAWEEAH	2D	PEL433, PEL434, PEL238	312	Completed
Eastern Star Gas Ltd	Terrex Seismic	Gunnedah	DAMPIER TOORAWEEAH 238	2D	PEL238	111	Completed
Eastern Star Gas Ltd	Terrex Seismic	Darling	DARLING BASIN 04	2D	PEL 8, PEL422, PEL424	110	Completed
NSW Department of Mineral Resources	Terrex Seismic	Darling	DMR IVANHOE WILCANNIA 2004	2D	PEL424, PEL420	134	Completed
SOUTH AUSTRALIA							
Beach Oil & Gas Pty Ltd	Terrex Seismic	Cooper	SELLICKS 2D	2D	PEL 92	190	Completed
Beach Oil & Gas Pty Ltd	Terrex Seismic	Cooper	SELLICKS 3D	3D	PEL 92	(25)	Completed
Beach Petroleum Ltd	Trace Energy	Cooper	MALLEUS	2D	PEL 92, PEL 94, PEL 95, PEL 91, PEL 106	600	Completed
Cooper Energy NL	Trace Energy	Cooper	KACHUMBA 2D	2D	PEL 100, PEL 88	283	Completed
Essential Petroleum Resources Ltd	Trace Energy	Otway	HARRIS FLAT 2D	2D	PEL 72	64	Completed
Great Artesian Oil & Gas Ltd	Terrex Seismic	Cooper	LENA 2D	2D	PEL 106	55	Completed
Great Artesian Oil & Gas Ltd	Trace Energy	Cooper	PARANTA 2D	2D	PEL 106	90	Completed
Innamincka Petroleum	Terrex Seismic	Cooper	JUNIPER 2D	2D	PEL 103	428	Completed
Santos Ltd	Trace Energy	Cooper	CS03 2D NE MURTEREE HORST	2D	PEL 114	525	Completed
Santos Ltd	Trace Energy	Cooper	CS03 3D NE MURTEREE HORST	3D	PEL 114	(81)	Completed
Santos Ltd	Terrex Seismic	Cooper	SA04 2DS	2D	PPL 19, PPL 18, PPL 20, PPL 28, PPL 29, PPL 49, PPL 50, PPL 52, PPL 170, PPL 193	59	Completed
Stuart Petroleum Ltd	Terrex Seismic	Cooper	KIWI 2D	2D	PEL 90	155	Completed
Stuart Petroleum Ltd	Trace Energy	Cooper	WORRIOR 2D	2D	PEL 93	361	Completed
Stuart Petroleum Ltd	Trace Energy	Cooper	WORRIOR 3D	3D	PEL 93	(52)	Completed
Stuart Petroleum Ltd	Terrex Seismic	Cooper	ZULU	2D	PEL 113	128	Completed

APPENDIX B (cont'd)

Operator	Contractor	Basin	Survey name	Type	Title	Km shot (sq. km)	Status
Victoria Oil Exploration (1977) Pty Ltd	Terrex Seismic	Cooper	VENTURA	2D	PEL 115	22	Completed
Victoria Petroleum Ltd	Trace Energy	Cooper	ANDRACURIE	2D	PEL 104, PEL 111	215	Completed

APPENDIX B (cont'd)

SEISMIC SURVEY ACTIVITY 2001–2004

	Onshore		Offshore		2D Total	3D Total
	2D (line km)	3D (sq km)	2D (line km)	3D (sq km)		
2001						
Queensland	171	811	-	-	171	811
New South Wales	176	-	-	-	176	-
Victoria	63	195	1,477	2,463	1,540	2,658
Tasmania	659	-	3,576	-	4,235	-
South Australia	100	2,064	14,058	-	14,157	2,064
Western Australia	60	180	38,073	15,903	38,133	16,083
Northern Territory	-	-	5,489	171	5,489	171
Total	1,230	3,250	62,672	18,537	63,902	21,787
2002						
Queensland	1,688	838	-	-	1,688	838
New South Wales	311	-	-	-	311	-
Victoria	562	-	3,286	3,885	3,848	3,885
Tasmania	-	-	1,142	-	1,142	-
South Australia	826	342	-	300	826	642
Western Australia	-	57	12,659	2,110	12,659	2,167
Northern Territory	-	-	6,485	-	6,485	-
Total	3,387	1,237	23,572	6,294	26,959	7,532
2003						
Queensland	741	486	-	-	741	486
New South Wales	175	-	-	-	175	-
Victoria	284	-	954	1,709	1,238	1,709
Tasmania	-	-	1,336	-	1,336	-
South Australia	2,561	319	507	-	3,068	319
Western Australia	-	-	20,802	5,391	20,802	5,391
Joint Petroleum Development Area	-	-	678	-	678	-
Total	3,761	805	24,278	7,100	28,039	7,905
2004						
Queensland	306	1,221	-	-	306	1,221
New South Wales	667	-	1,500	-	2,167	-
Victoria	-	-	1,108	-	1,108	-
South Australia	3,177	158	3,013	-	6,190	158
Western Australia	-	-	9,738	7,339	9,738	7,339
Northern Territory	-	-	4,046	-	4,046	-
Territory of Ashmore and Cartier Island:	-	-	554	-	554	-
Total	4,150	1,380	19,959	7,339	24,109	8,719

Appendix C
2004

Discoveries of petroleum in 2004

APPENDIX C: DISCOVERIES OF PETROLEUM IN 2004

Basin and well name	Operator	Discovery	Status Remarks	State	Classification
OFFSHORE					
BASS					
TREFOIL 1*	Origin	Gas	Cased and suspended as a gas producer. Logs detected gas in the Eastern View Formation.	Tas	NFD
BONAPARTE					
KATANDRA 1A*	OMV	Oil	Cased and suspended as an oil producer. Logs detected oil in the Vulcan Formation.	AC	NFD
CARNARVON					
ALTOSTRATUS 1*	Strike Oil	Oil	Plugged and abandoned, dry. Logs detected oil in the Mungaroo Formation.	WA	NFD
BOOJUM 1*	Tap	Gas	Plugged and abandoned, dry. Logs detected gas in the Barrow Group.	WA	NFD
ESKDALE 2*	BHP Billiton	Oil and Gas	Plugged and abandoned, dry. Logs detected gas and oil in the Barrow Group.	WA	NFD
GUNGURRU 1*	Apache	Oil and Gas	Plugged and abandoned, dry. Logs detected gas and oil in the M. Australis Sandstone and gas in the Windalia Sandstone.	WA	NFW
HARRISON 1*	BHP Billiton	Oil	Plugged and abandoned, dry. Logs detected oil in the Barrow Group.	WA	NFD
MONET 1*	Apache	Oil	Plugged and abandoned, dry. Logs detected oil in the Flag Sandstone.	WA	NFD
STICKLE 1*	BHP Billiton	Oil	Plugged and abandoned, dry. Logs detected oil in the Barrow Group.	WA	NFD
WHEATSTONE 1	ChevronTexaco	Gas	Plugged and abandoned, dry. Tests recovered gas from the Mungaroo Formation.	WA	NFD
GIPPSLAND					
MOBY 1*	Bass Strait	Gas	Plugged and abandoned, dry. Logs detected gas in the Gurnard Formation.	Vic	NFD
OTWAY					
MARTHA 1*	Santos	Gas	Plugged and abandoned, dry. Logs detected gas in the Waarre Sandstone.	Vic	NFD

APPENDIX C (cont'd)

Basin and well name	Operator	Discovery	Status Remarks	State	Classification
ONSHORE					
COOPER					
ARWON 1	Stuart	Oil	Cased and suspended as an oil producer. Tests recovered oil from the McKinlay Member.	SA	NFD
COSMO WEST 1*	Santos	Gas	Cased and suspended as a gas producer. Logs detected gas in the Patchawarra Formation.	SA	NFD
CROCUS 1*	Innamincka	Gas	Cased and suspended as a gas producer. Logs detected gas in the Toolachee Formation.	SA	NFD
GALEX 1	Santos	Gas	Cased and suspended as a gas producer. Tests recovered gas from the Patchawarra Formation.	Qld	NFD
HEBE 1	Santos	Gas	Completed as a gas producer. Tests recovered gas from the Toolachee Formation.	Qld	NFD
HECTOR 1*	Santos	Oil and Gas	Cased and suspended as an oil and gas producer. Logs detected oil in the Hutton Formation (Eromanga), oil in the Namur Sandstone and gas in the Toolachee Formation.	Qld	NFD
HORNET 1	Victoria Petroleum	Gas	Cased and suspended as a gas producer. Tests recovered gas from the Patchawarra Formation.	SA	NFD
JUNIPER 1	Innamincka	Oil	Cased and suspended as an oil producer. Tests recovered gas and oil from the Patchawarra Formation and oil from the Toolachee Formation.	SA	NFD
SMEGSY 1*	Great Artesian	Gas	Cased and suspended as a gas producer. Logs detected gas in the Patchawarra Formation.	SA	NFD
STILTON 1*	Santos	Gas	Cased and suspended as a gas producer. Logs detected gas in the Patchawarra Formation.	Qld	NFD
WILLOWIE 1*	Innamincka	Gas	Plugged and abandoned, dry. Logs detected gas in the Patchawarra Formation.	SA	NFD
YANGTSE 1*	Santos	Gas	Cased and suspended as a gas producer. Logs detected gas in the Toolachee Formation.	Qld	NFD
COOPER/EROMANGA					
DERRILYN 1	Santos	Oil	Cased and suspended as an oil producer. Tests recovered oil from the Hutton Sandstone and oil from the McKinlay Member.	SA	NFD
FLAX 1	Innamincka	Oil and Gas	Cased and suspended as an oil and gas producer. Tests recovered condensate, gas and water from the Patchawarra Formation and gas, mud and oil from the Tirrawarra Sandstone (Cooper).	SA	NFD

APPENDIX C (cont'd)

Basin and well name	Operator	Discovery	Status Remarks	State	Classification
HARPOONO 1	Stuart	Oil	Cased and suspended as an oil producer. Tests recovered oil from the Murta Formation.	SA	NFD
MERRIMELIA 45	Santos	Oil	Cased and suspended as an oil producer. Tests recovered oil and water from the Adori Sandstone.	SA	NPD
MILLSWOOD 1*	Santos	Gas	Cased and suspended as a gas producer. Logs detected gas in an unknown formation.	SA	NFD
NUTMEG 1	Great Artesian	Gas	Cased and suspended as a gas producer. Tests recovered gas and mud from the Patchawarra Formation.	SA	NFD
PARANTA 1 ST1	Great Artesian	Oil	Cased and suspended as an oil producer. Tests recovered oil from an unknown formation.	SA	NFD
REG SPRIGG WEST 1	Santos	Oil	Completed as an oil producer. Tests recovered water from the Birkhead Formation and oil and water from the Wimmera Formation.	SA	NFD
YARROW 1	Innamincka	Gas	Cased and suspended as a gas producer. Tests recovered gas from the Patchawarra Formation and gas from the Tirrawarra Sandstone (Cooper).	SA	NFD
EROMANGA					
BEEVILLE 1	Stuart	Gas	Plugged and abandoned, dry. Tests recovered condensate and gas from the Paning Member.	SA	NFD
MIRAGE 1	Victoria Petroleum	Oil	Completed as an oil producer. Tests recovered oil from the Murta Formation.	SA	NFD
VENTURA 1	Victoria Petroleum	Oil	Completed as an oil producer. Tests recovered oil from the McKinlay Member.	SA	NFD
GIPPSLAND					
MEGASCOLIDES 1*	Karoo Gas	Oil	Cased and suspended as an oil producer. Logs detected oil in the Crayfish Group.	Vic	
WOMBAT 1	Lakes	Gas	Completed as a gas producer. Tests recovered gas from the Golden Beach Group and gas from the Strzelecki Group.	Vic	NFD
PERTH					
AGONIS 1*	Arc Energy	Gas	Cased and suspended as a gas producer. Logs detected gas in the Dongara Sandstone.	WA	NFD
APIUM 1	Arc Energy	Oil and Gas	Cased and suspended as an oil and gas producer. Tests recovered gas from the Dongara Sandstone.	WA	NFD
CENTELLA 1*	Arc Energy	Oil	Cased and suspended as an oil producer. Logs detected oil in the Dongara Sandstone.	WA	NFD

APPENDIX C (cont'd)

Basin and well name	Operator	Discovery	Status Remarks	State	Classification
TARANTULA 1	Origin	Gas	Plugged and abandoned, dry. Tests recovered gas from the Wagina Sandstone.	WA	NFD
XYRIS 1*	Arc Energy	Gas	Completed as a gas producer. Logs detected gas in the Dongara Sandstone.	WA	NFD
SURAT					
PALMERSTON 1*	Origin	Gas	Cased and suspended as a gas producer. Logs detected gas in the Tinowon Formation.	Qld	NFD
ROCKHAMPTON HIGH 1*	Mosaic	Oil and Gas	Cased and suspended as an oil and gas producer. Logs detected oil in the Rewan Group (Bowen) and gas in the Tinowon Formation.	Qld	NFD
ROOKWOOD SOUTH 1	Oilex	Oil	Cased and suspended as an oil producer. Tests recovered oil from the Evergreen Formation.	Qld	NFD

* Accumulation inferred from logs.

Appendix D
2004

Summary of wells drilled

APPENDIX D : SUMMARY OF WELLS DRILLED

SUMMARY OF ONSHORE AND OFFSHORE WELLS DRILLED IN 2004

Status at 31 December 2004

State or Territory	Spudded		Completed or C&S					Abandoned or Secured				DA	
	*	**	Oil	Gas	O&G	Unsp	Serv	Dry	Oil	Gas	O&G		Unsp
Exploration													
Queensland	2	23	2	7	2	0	0	14	0	0	0	0	0
Victoria	1	14	1	3	1	0	0	5	1	3	0	0	1
Tasmania	0	1	0	1	0	0	0	0	0	0	0	0	0
South Australia	1	37	10	7	2	0	0	15	0	3	0	0	1
Western Australia	1	46	2	4	1	0	0	19	11	5	2	0	3
Territory of Ashmore and Cartier Islands Adjacent Area	0	2	1	0	0	0	0	1	0	0	0	0	0
TOTAL	5	123	16	22	6	0	0	54	12	11	2	0	5
Development													
Queensland	1	17	4	11	1	0	0	1	0	1	0	0	0
New South Wales	0	1	0	1	0	0	0	0	0	0	0	0	0
Victoria	0	6	1	0	2	0	0	2	0	1	0	0	0
Tasmania	0	2	0	1	1	0	0	0	0	0	0	0	0
South Australia	0	24	9	11	2	0	0	1	0	0	0	0	1
Western Australia	1	23	13	3	0	0	0	5	2	0	0	0	1
Northern Territory	0	3	0	2	0	0	0	1	0	0	0	0	0
Joint Petroleum Development Area	8	0	0	4	0	0	0	4	0	0	0	0	0
TOTAL	10	76	27	33	6	0	0	14	2	2	0	0	2

* Other than this period

** This period

C&S Cased and Suspended

Serv Service well, classification applicable only to development wells

Unsp Unspecified

DA Drilling ahead

Sus Suspended temporarily; to resume drilling at a future date

APPENDIX D (cont'd)

SUMMARY OF ONSHORE WELLS DRILLED 2004

Status at 31 December 2004

State or Territory	Spudded		Completed or C&S					Abandoned or Secured				DA	
	*	**	Oil	Gas	O&G	Unsp	Serv	Dry	Oil	Gas	O&G		Unsp
Exploration													
Queensland	2	23	2	7	2	0	0	14	0	0	0	0	0
Victoria	1	6	1	3	1	0	0	2	0	0	0	0	0
South Australia	1	37	10	7	2	0	0	15	0	3	0	0	1
Western Australia	0	12	2	4	1	0	0	2	1	1	0	0	1
TOTAL	4	78	15	21	6	0	0	33	1	4	0	0	2
Development													
Queensland	1	17	4	11	1	0	0	1	0	1	0	0	0
New South Wales	0	1	0	1	0	0	0	0	0	0	0	0	0
South Australia	0	24	9	11	2	0	0	1	0	0	0	0	1
Western Australia	1	2	2	0	0	0	0	1	0	0	0	0	0
Northern Territory	0	3	0	2	0	0	0	1	0	0	0	0	0
TOTAL	2	47	15	25	3	0	0	4	0	1	0	0	1

- * Other than this period
 ** This period
 C&S Cased and Suspended
 Serv Service well, classification applicable only to development wells
 Unsp Unspecified
 DA Drilling ahead
 Sus Suspended temporarily; to resume drilling at a future date

APPENDIX D (cont'd)

SUMMARY OF OFFSHORE WELLS DRILLED 2004

Status at 31 December 2004

State or Territory	Spudded		Completed or C&S					Abandoned or Secured				DA	
	*	**	Oil	Gas	O&G	Unsp	Serv	Dry	Oil	Gas	O&G		Unsp
Exploration													
Victoria	0	8	0	0	0	0	0	3	1	3	0	0	1
Tasmania	0	1	0	1	0	0	0	0	0	0	0	0	0
Western Australia	1	34	0	0	0	0	0	17	10	4	2	0	2
Territory of Ashmore and Cartier Islands Adjacent Area	0	2	1	0	0	0	0	1	0	0	0	0	0
TOTAL	1	45	1	1	0	0	0	21	11	7	2	0	3
Development													
Victoria	0	6	1	0	2	0	0	2	0	1	0	0	0
Tasmania	0	2	0	1	1	0	0	0	0	0	0	0	0
Western Australia	0	21	11	3	0	0	0	4	2	0	0	0	1
Joint Petroleum Development Area	8	0	0	4	0	0	0	4	0	0	0	0	0
TOTAL	8	29	12	8	3	0	0	10	2	1	0	0	1

* Other than this period

** This period

C&S Cased and Suspended

Serv Service well, classification applicable only to development wells

Unsp Unspecified

DA Drilling ahead

Sus Suspended temporarily; to resume drilling at a future date

Appendix E 2004

Petroleum expenditure and activity

APPENDIX E: PETROLEUM EXPENDITURE AND ACTIVITY

PETROLEUM EXPLORATION EXPENDITURE (\$A000) – OPERATORS, 2004

State	Exploration Drilling	Geological	Seismic			Total	
			Regional	2D	3D		Other
Onshore							
New South Wales	1,807	381	0	3,062	0	38	5,288
Northern Territory	0	0	0	50	0	0	50
Queensland	52,445	10,485	0	1,891	20,345	4,335	89,501
South Australia	73,534	8,316	0	16,479	3,808	10,954	113,091
Tasmania	0	0	0	0	0	0	-
Victoria	7,849	2,018	0	806	0	364	11,037
Western Australia	17,884	1,255	0	25	915	18,823	38,902
TOTAL	153,519	22,455	0	22,313	25,068	34,514	257,869
Offshore							
Joint Petroleum Development	0	0	0	500	800	0	1,300
New South Wales	0	0	0	1,950	0	0	1,950
Northern Territory	8,750	4,687	0	3,042	879	1,242	18,600
Queensland	0	0	0	0	0	0	-
South Australia	0	457	0	4,070	0	0	4,527
Tasmania	22,749	5,059	0	217	0	0	28,025
Victoria	63,415	16,234	0	3,831	3,255	10,299	97,034
Western Australia	316,476	52,451	0	11,865	108,845	21,957	511,594
TOTAL	411,390	78,888	0	25,475	113,779	33,498	663,030
TOTAL EXPLORATION	564,909	101,343	0	47,788	138,847	68,012	920,899

Northern Territory includes Territory of Ashmore and Cartier Islands
 JPDA is the Joint Petroleum Development Area (formerly Zone of Cooperation Area A)
 Some company expenditure data is estimated

APPENDIX E (cont'd)

PETROLEUM EXPLORATION, DEVELOPMENT AND PRODUCTION EXPENDITURE (\$A000) – OPERATORS, 2004

State	Drilling			Seismic			Other	Total	
	Exploration	Development	Production	Geological	Regional	2D			3D
Joint Petroleum Devel	0	201,139	89,000	0	0	500	800	833,015	1,124,454
New South Wales	1,807	5,780	7,556	381	0	5,012	0	38	20,574
Northern Territory	8,750	36,063	73,586	4,687	0	3,092	879	9,676	136,733
Queensland	52,445	164,045	144,177	10,485	0	1,891	20,345	64,580	457,968
South Australia	73,534	163,850	420,807	8,773	0	20,549	3,808	38,625	729,946
Tasmania	22,749	50,461	0	5,059	0	217	0	84,539	163,025
Victoria	71,264	243,183	457,671	18,252	0	4,637	3,255	19,204	817,466
Western Australia	334,360	427,507	1,260,213	53,706	0	11,890	109,760	190,848	2,388,284
TOTAL	564,909	1,292,028	2,453,010	101,343	0	47,788	138,847	1,240,525	5,838,450

Northern Territory includes Territory of Ashmore and Cartier Islands
JPDA is the Joint Petroleum Development Area (formerly Zone of Cooperation Area A)

ORIGIN OF PRIVATE ENTERPRISE EXPENDITURE ON EXPLORATION, DEVELOPMENT AND PRODUCTION, 2004 (\$A000)

	Onshore operations	Offshore operations	Total
Australian funds	226,418	1,388,080	1,614,498
Reinvestment	1,230,182	1,790,643	3,020,825
North American funds	7,400	1,160,201	1,167,601
Other	18,772	16,754	35,526
TOTAL	1,482,772	4,355,678	5,838,450

APPENDIX E (cont'd)

PETROLEUM DEVELOPMENT AND PRODUCTION EXPENDITURE (\$A000) – OPERATORS, 2004

State	Development Drilling	Production	Other	Total
Onshore				
New South Wales	5,780	7,556	-	13,336
Northern Territory	32,525	16,291	7,191	56,007
Queensland	164,045	144,177	60,245	368,467
South Australia	163,850	420,807	27,671	612,328
Tasmania	-	-	-	-
Victoria	230	2,075	196	2,501
Western Australia	14,009	147,359	9,424	170,792
TOTAL	380,439	738,265	104,727	1,223,431
Offshore				
Joint Petroleum Development	201,139	89,000	833,015	1,123,154
New South Wales	-	-	-	-
Northern Territory	3,538	57,295	1,243	62,076
Queensland	-	-	-	-
South Australia	-	-	-	-
Tasmania	50,461	-	84,539	135,000
Victoria	242,953	455,596	8,345	706,894
Western Australia	413,498	1,112,854	140,644	1,666,996
TOTAL	911,589	1,714,745	1,067,786	3,694,120
TOTAL DEVELOPMENT AND PRODUCTION	1,292,028	2,453,010	1,172,513	4,917,551

Northern Territory includes Territory of Ashmore and Cartier Islands
 JPDA is the Joint Petroleum Development Area (formerly Zone of Cooperation Area A)

APPENDIX E (cont'd)

SUMMARY OF PRIVATE ENTERPRISE PETROLEUM EXPLORATION AND DEVELOPMENT EXPENDITURE AND ACTIVITY 1979–2004

Year	Exploration Expenditure (\$ million)	Development Expenditure (\$ million)	Seismic Surveys (line km)	Seismic Surveys (square km)	Exploration wells drilled	Development wells drilled
1979	223	236	41,539		52	57
1980	290	358	55,445		94	33
1981	459	944	74,438		158	55
1982	948	1,263	95,253		221	107
1983	723	1,022	38,761		211	64
1984	740	734	61,941		264	109
1985	774	1,065	90,169		270	94
1986	424	936	47,353		138	37
1987	346	2,068	42,527		225	57
1988	503	1,049	51,492		237	54
1989	521	1,378	70,750		148	76
1990	589	1,467	89,933		177	75
1991	424	776	163,642		154	86
1992	430	947	359,523		120	51
1993	441	1,207	174,469		122	55
1994	650	1,437	161,352		128	44
1995	782	1,464	161,174		148	65
1996	758	2,262	389,163		143	89
1997	772	2,063	529,529		176	155
1998	1,008	1,926	1,062,810		168	95
1999	699	2,245	523,410		94	81
2000	874	1,813	135,828	15,178	105	103
2001	1,050	1,614	63,902	21,787	141	90
2002	790	1,726	26,959	7,532	90	83
2003	755	3,071	28,039	7,905	96	88
2004	921	4,918	24,109	8,719	124	84

Changes to previously reported statistics result from additional information received by Geoscience Australia.

APPENDIX E (cont'd)

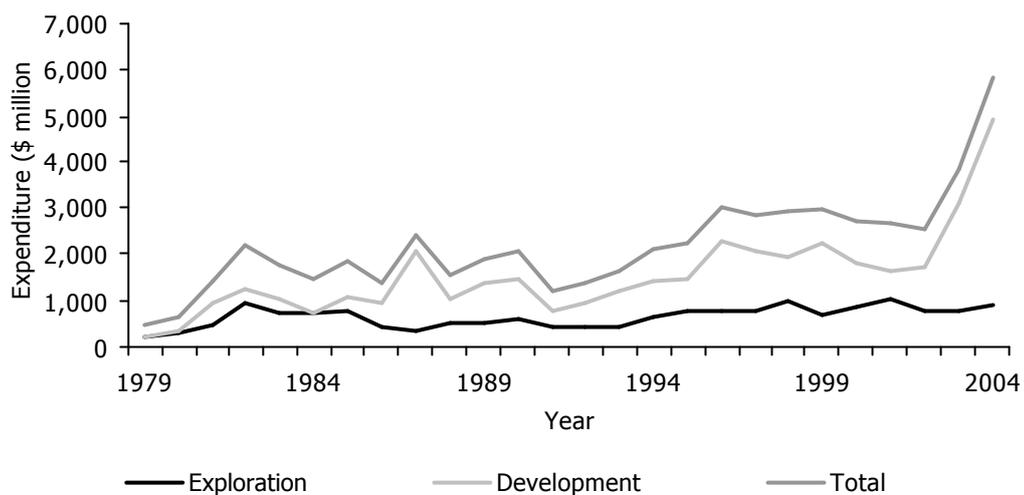


Figure E.1 Total petroleum expenditure by private enterprise, 1979–2004

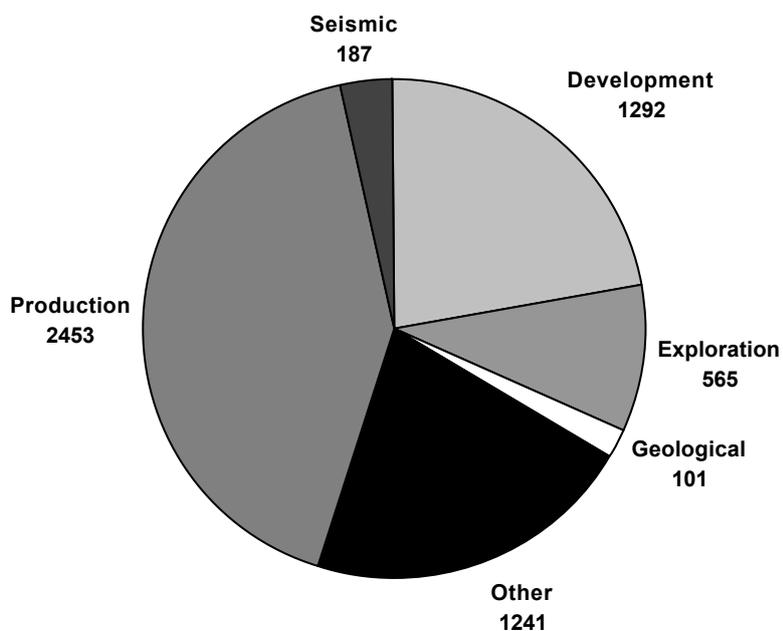


Figure E.2 Total petroleum expenditure by industry in 2004 (\$A million)

**Appendix F
2004**

Wells and metres drilled, 1990–2004

APPENDIX F: WELLS AND METRES DRILLED 1990-2004

WELLS DRILLED

Year	Exploration		Development		Total		Total
	Onshore	Offshore	Onshore	Offshore	Exploration	Development	
1990	105	65	57	16	170	73	243
1991	110	38	65	18	148	83	231
1992	76	42	39	11	118	50	168
1993	75	51	35	17	126	52	178
1994	83	46	19	22	129	41	170
1995	97	56	31	34	153	65	218
1996	98	48	65	21	146	86	232
1997	120	57	78	75	177	153	330
1998	91	73	49	45	164	94	258
1999	44	52	40	40	96	80	176
2000	38	63	81	22	101	103	204
2001	81	59	68	22	140	90	230
2002	42	48	57	26	90	83	173
2003	38	58	60	28	96	88	184
2004	80	43	48	36	123	84	207

METRES DRILLED

Year	Exploration		Development		Total		Total
	Onshore	Offshore	Onshore	Offshore	Exploration	Development	
1990	215,852	168,158	91,060	54,281	384,010	145,341	529,351
1991	214,998	97,304	99,927	54,587	312,302	154,514	466,816
1992	153,908	107,331	72,773	35,011	261,239	107,784	369,022
1993	135,632	114,314	58,888	47,273	249,946	106,161	356,107
1994	187,077	117,189	35,234	62,992	304,266	98,226	402,492
1995	192,837	145,371	46,293	114,207	338,208	160,500	498,708
1996	203,677	131,264	93,673	66,088	334,941	159,761	494,702
1997	242,457	134,800	138,470	212,083	377,257	350,553	727,810
1998	215,067	194,246	101,126	115,243	409,313	216,369	625,682
1999	96,526	116,059	82,297	139,321	212,585	221,618	434,203
2000	77,960	166,054	183,416	52,719	244,014	236,134	480,148
2001	162,984	149,805	150,708	74,131	312,789	224,839	537,628
2002	96,843	125,565	134,029	76,928	222,408	210,957	433,365
2003	81,371	151,287	129,755	74,090	232,658	203,845	436,503
2004	186,633	99,511	106,180	138,950	286,144	245,130	531,274

Changes in previously reported statistics are a result of additional information received by Geoscience Australia and revised classifications of wells.

Appendix G
2004

**Offshore and onshore drilling activity
by State, 1994–2004**

APPENDIX G: OFFSHORE AND ONSHORE DRILLING ACTIVITY BY STATE, 1994-2004

OFFSHORE

New-field wildcat wells drilled

State	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Queensland	-	-	-	-	-	-	-	-	-	-	-
Victoria	-	6	-	2	1	1	-	4	2	3	5
Tasmania	-	-	-	-	1	1	-	1	-	-	1
South Australia	-	1	-	-	2	-	-	-	-	2	-
Western Australia	11	20	26	24	40	36	47	34	22	39	19
Northern Territory	5	4	2	3	9	5	7	9	7	1	-
Territory of Ashmore and Cartier Islands Adjacent	-	-	-	-	-	-	-	-	-	-	2
Joint Petroleum Development Area	10	3	2	4	3	1	1	1	-	-	-
TOTAL	26	34	30	33	56	44	55	49	31	45	27

Extension/Appraisal wells drilled

State	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Victoria	2	3	-	-	-	2	-	1	3	1	2
Tasmania	-	-	-	-	1	-	-	1	-	-	-
Western Australia	16	9	11	17	12	6	7	6	13	10	14
Northern Territory	1	4	1	1	3	-	1	2	1	1	-
Territory of Ashmore and Cartier Islands Adjacent	-	-	-	-	-	-	-	-	-	-	-
Joint Petroleum Development Area	1	6	6	6	1	-	-	-	-	1	-
TOTAL	20	22	18	24	17	8	8	10	17	13	16

Development wells drilled

State	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Victoria	9	19	12	51	32	26	6	9	12	9	6
Tasmania	-	-	-	-	-	-	-	-	-	-	2
Western Australia	10	15	9	22	9	13	13	13	7	14	20
Northern Territory	3	-	-	2	4	1	2	-	3	-	-
Joint Petroleum Development Area	-	-	-	-	-	-	1	-	4	5	8
TOTAL	22	34	21	75	45	40	22	22	26	28	36

APPENDIX G (cont'd)

ONSHORE

New-field wildcat wells drilled

State	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Queensland	27	42	32	41	31	13	13	21	9	10	18
New South Wales	-	-	1	1	1	1	1	-	-	-	-
Victoria	5	3	3	7	2	3	2	8	5	4	4
Tasmania	-	-	-	5	-	-	-	-	-	-	-
South Australia	11	13	30	27	32	10	5	11	8	11	30
Western Australia	17	5	6	4	7	2	6	9	2	3	7
Northern Territory	-	-	1	-	1	-	-	-	-	-	-
TOTAL	60	63	73	85	74	29	27	49	24	28	59

Extension/Appraisal wells drilled

State	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Queensland	9	21	12	25	8	10	6	18	7	5	7
New South Wales	-	1	-	-	-	-	-	1	-	-	-
Victoria	-	1	-	-	-	-	1	2	-	-	3
South Australia	10	8	9	8	9	5	4	9	8	4	7
Western Australia	2	3	4	1	-	-	-	2	3	1	4
Northern Territory	2	-	-	1	-	-	-	-	-	-	-
TOTAL	23	34	25	35	17	15	11	32	18	10	21

Development wells drilled

State	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Queensland	7	9	28	28	18	17	23	22	17	14	18
New South Wales	-	-	-	-	-	-	1	2	-	-	1
Victoria	1	-	-	-	-	2	-	-	-	-	-
South Australia	4	4	12	28	24	11	48	35	38	42	23
Western Australia	5	14	22	19	6	8	6	9	2	4	3
Northern Territory	2	4	3	3	1	2	3	-	-	-	3
TOTAL	19	31	65	78	49	40	81	68	57	60	48

Appendix H
2004

Australia's offshore production facilities

APPENDIX H: OFFSHORE PRODUCTION FACILITIES

Basin/Facility	Accumulation(s)	Operator	Development type	Product	Producing to	Start-up date
BONAPARTE						
Bayu/Undan D		Phillips	Conventional steel	Gas	Bayu/Undan FSO	April-04
Bayu/Undan FSO		Phillips	Floating facility	Gas	Offtake tanker	April-04
Bayu/Undan W	Bayu/Undan	Phillips	Conventional steel	Gas	Bayu/Undan B	April-04
Buffalo Venture (ab. Nov-04)		BHP	Floating facility	Oil	Offtake tanker	December-99
Buffalo WHP (ab. Nov-04)	Buffalo*	BHP	Steel wellhead platform	Oil	Buffalo Venture	December-99
Challis Venture	Challis*, Cassini*	Newfield	Floating facility	Oil	Offtake tanker	December-89
Jabiru Venture	Jabiru*	Newfield	Floating facility	Oil	Offtake tanker	August-86
Modec Venture I		BHP	Floating facility	Oil	Offtake tanker	July-98
Northern Endeavour	Corallina*, Laminaria*	Woodside	Floating facility	Oil	Offtake tanker	November-99
Skua Venture (ab. Jan-97)	Skua*	BHP	Floating facility	Oil	Offtake tanker	December-91
CARNARVON						
Acqua Blu (ab. Jul-92)	Talisman*	Marathon	Floating facility	Oil	Offtake tanker	January-89
Agincourt	Agincourt	Apache	Minipod	Oil and Gas	Varanus Island	August-97
Campbell A	Campbell	Apache	Monopod	Gas	Sinbad A	October-92
Chervil	Chervil	Apache	Monopod	Oil	Airlie Island	August-89
Cossack Pioneer	Wanaea*, Lambert*, Cossack*	Woodside	Floating facility	Oil	Offtake tanker (oil); North Rankin (solution gas)	November-95
Cowle A	Cowle	Chevron	Monopod	Oil	Thevenard Island	April-91
East Spar	East Spar*	Apache	Subsea with telemetry buoy	Gas	Varanus Island	October-96
Four Vanguard	Woollybutt*	Eni Australia	Floating facility	Oil	Offtake tanker	April-03
Gibson/South Plato		Apache	Minipod	Oil	Varanus Island	June-02
Goodwyn A	Rankin*, Goodwyn	Woodside	Conventional steel	Gas	North Rankin	February-95
Griffin Venture	Griffin*, Chinook/Scindian*	BHP	Floating facility	Oil and Gas	Offtake tanker (oil); Onslow plant (gas)	January-94
Harriet A	Harriet	Apache	Conventional steel	Oil and Gas	Varanus Island	January-86
Harriet B	Harriet	Apache	Monopod	Oil	Harriet C	January-86
Harriet C	Harriet	Apache	Monopod	Oil	Harriet A	January-86
Karratha Spirit		Woodside	FSO	Oil	Offtake tanker	May-01
Linda	Linda	Apache	Conventional steel	Gas	Varanus Island	April-04
North Herald (ab. Nov-97)	North Herald	WMC	Monopod	Oil	South Pepper	December-87
North Rankin A	North Rankin	Woodside	Conventional steel	Gas	Withnell Bay	July-84
Ocean Legend	Legendre	Woodside	Conventional steel	Oil	Karratha Spirit	May-01
Roller A	Roller	Chevron	Monopod	Oil	Roller B	March-94
Roller B	Roller	Chevron	Monopod	Oil	Roller C	March-94
Roller C	Roller	Chevron	Monopod	Oil	Skate	March-94
Saladin A	Saladin	Chevron	Mini-platform	Oil	Thevenard Island	November-89
Saladin B	Saladin	Chevron	Mini-platform	Oil	Thevenard Island	November-89
Saladin C	Saladin	Chevron	Mini-platform	Oil	Thevenard Island	November-89
Simpson A	Simpson	Apache	Minipod	Oil	Varanus Island	December-01

* = Subsea wells

APPENDIX H (cont'd)

Basin/Facility	Accumulation(s)	Operator	Development type	Product	Producing to	Start-up date
Simpson B	Simpson	Apache	Minipod	Oil	Varanus Island	December-01
Sinbad A	Sinbad	Apache	Monopod	Gas	Varanus Island	October-92
Skate	Skate	Chevron	Monopod	Oil	Thevenard Island	March-94
South Pepper (ab. Nov-97)	South Pepper	WMC	Tripod	Oil	Vicksburg jackup rig to Airlie Island	January-88
Stag	Stag	Apache	Conventional steel	Oil	Dampier Spirit	May-98
Wandoo A	Wandoo	Mobil	Monopod	Oil	Initially Hakuryu VII jackup rig; now Wandoo B	October-93
Wandoo B	Wandoo	Mobil	Concrete gravity	Oil	Offtake tanker	March-97
Wonnich	Wonnich	Apache	Tripod	Oil and Gas	Varanus Island	July-99
Yammaderry A	Saladin	Chevron	Monopod	Oil	Saladin C	April-91
GIPPSLAND						
Barracouta	Barracouta, Seahorse*, Tarwhine*	Esso	Conventional steel	Oil and Gas	Longford	March-69
Blackback Subsea Completion		Esso	Subsea	Oil	Mackerel	June-99
Bream	Bream	Esso	Conventional steel	Oil and Gas	West Kingfish (oil), Longford (gas)	March-88
Bream B	Bream	Esso	Concrete gravity	Oil and Gas	Bream	January-97
Cobia	Halibut	Esso	Conventional steel	Oil	Halibut	April-83
Dolphin	Dolphin	Esso	Monotower	Oil	Longford	January-90
Flounder	Flounder	Esso	Conventional steel	Oil and Gas	Tuna	December-84
Fortescue	Halibut	Esso	Conventional steel	Oil	Halibut	September-83
Halibut	Halibut	Esso	Conventional steel	Oil	Longford	March-70
Kingfish	Kingfish	Esso	Conventional steel	Oil	Kingfish B	April-71
Kingfish B	Kingfish	Esso	Conventional steel	Oil	Halibut	November-71
Mackerel	Mackerel, Blackback*	Esso	Conventional steel	Oil	Halibut	December-77
Marlin	Marlin	Esso	Twin conventional steel	Oil and Gas	Longford (gas); Halibut (oil)	November-69
Perch	Perch	Esso	Monotower	Oil	Dolphin	January-90
Seahorse Subsea Completion		Esso	Subsea	Oil	Barracouta	September-90
Snapper	Snapper, Moonfish	Esso	Conventional steel	Oil and Gas	Longford (gas); Marlin (oil)	July-81
Tarwhine Subsea Completion		Esso	Subsea	Oil	Barracouta	May-90
Tuna	Tuna	Esso	Conventional steel	Oil and Gas	Marlin	May-79
West Kingfish	Kingfish	Esso	Conventional steel	Oil	Kingfish A	December-82
West Tuna	Tuna	Esso	Concrete gravity	Oil and Gas	Tuna	December-96
Whiting	Whiting	Esso	Mini-platform	Oil and Gas	Snapper	October-89

* = Subsea wells

**Appendix I
2004**

**Crude oil and gas production by basin,
pre-1995 and 1995 to 2004**

APPENDIX I: CRUDE OIL AND GAS PRODUCTION BY BASIN, pre-1995 and 1995 to 2004 (GL and BCM)

Basin	pre-1995	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	Total
CRUDE OIL												
Adavale	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Amadecus	1.240	0.143	0.143	0.137	0.149	0.303	0.095	0.064	0.064	0.080	0.063	2.481
Bass	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Bonaparte	22.274	1.486	1.165	0.988	1.256	3.018	11.648	8.359	6.678	3.494	3.614	63.980
Bowen/Surat	4.667	0.071	0.032	0.095	0.085	0.050	0.024	0.037	0.019	0.031	0.024	5.135
Browse	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Canning	0.389	0.001	0.011	0.005	0.005	0.008	0.004	0.007	0.003	0.004	0.001	0.438
Carnarvon	69.217	8.656	11.246	10.136	11.116	8.263	12.892	13.382	14.320	14.029	13.335	186.592
Cooper/Eromanga	28.185	1.382	1.796	1.489	1.205	1.116	0.947	1.084	0.871	0.853	0.853	39.781
Gippsland	486.600	12.300	10.900	12.600	9.400	10.800	9.500	7.800	6.900	6.200	5.500	578.500
Gunnedah	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Otway	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Perth	0.419	0.025	0.021	0.016	0.010	0.008	0.003	0.008	0.034	0.279	0.430	1.253
Total	612.991	24.064	25.314	25.466	23.226	23.566	35.113	30.741	28.889	24.970	23.820	878.160
GAS												
Adavale	0.000	0.044	0.053	0.052	0.034	0.023	0.013	0.004	0.002	0.000	0.000	0.225
Amadecus	3.178	0.471	0.509	0.543	0.522	0.527	0.534	0.519	0.452	0.490	0.393	8.138
Bass	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Bonaparte	1.798	0.149	0.096	0.067	0.095	0.180	0.143	0.105	0.100	0.037	0.019	2.789
Bowen/Surat	12.381	1.193	1.058	0.855	0.672	0.642	0.620	0.652	0.749	0.836	0.648	20.306
Browse	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Canning	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Carnarvon	77.775	15.919	16.862	18.371	21.422	18.783	18.846	18.353	19.821	20.482	23.479	270.113
Cooper/Eromanga	86.040	4.809	5.201	5.787	6.856	6.556	7.205	6.823	8.683	7.044	5.504	150.508
Gippsland	115.300	6.600	5.800	6.300	5.900	5.500	6.000	6.700	6.200	6.600	8.976	179.876
Gunnedah	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Otway	0.296	0.132	0.137	0.143	0.155	0.235	0.391	0.368	0.517	0.530	0.312	3.216
Perth	14.436	0.317	0.390	0.152	0.487	0.258	0.264	0.237	0.189	0.195	0.290	17.215
Total	311.204	29.634	30.106	32.270	36.143	32.704	34.016	33.761	36.713	36.214	39.621	652.386

APPENDIX I (cont'd)
(million barrels and billion cubic feet)

Basin	pre-1995	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	Total
CRUDE OIL												
Adavale	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Amadeus	7.799	0.899	0.899	0.862	0.937	1.906	0.598	0.403	0.403	0.503	0.396	15.605
Bass	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Bonaparte	140.099	9.347	7.328	6.214	7.900	18.983	73.264	52.576	42.003	21.977	22.731	402.421
Bowen/Surat	29.354	0.447	0.201	0.598	0.535	0.317	0.151	0.233	0.120	0.195	0.151	32.300
Browse	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Canning	2.447	0.006	0.069	0.031	0.031	0.050	0.025	0.044	0.019	0.025	0.006	2.755
Carnarvon	435.361	54.445	70.735	63.753	69.917	51.973	81.088	84.170	90.070	88.240	83.874	1,173.626
Cooper/Eromanga	177.278	8.693	11.296	9.366	7.579	7.019	5.956	6.818	5.478	5.365	5.365	250.215
Gippsland	3,060.617	77.365	68.559	79.251	59.124	67.930	59.753	49.060	43.400	38.997	34.594	3,638.649
Gunnedah	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Otway	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Perth	2.635	0.157	0.132	0.101	0.063	0.050	0.019	0.050	0.214	1.755	2.705	7.881
Total	3,855.591	151.358	159.220	160.176	146.087	148.228	220.854	193.355	181.706	157.056	149.823	5,523.453
GAS												
Adavale	0.000	1.554	1.872	1.836	1.201	0.812	0.459	0.141	0.071	0.000	0.000	7.946
Amadeus	112.231	16.633	17.975	19.176	18.434	18.611	18.858	18.328	15.962	17.304	13.879	287.393
Bass	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Bonaparte	63.496	5.262	3.390	2.366	3.355	6.357	5.050	3.708	3.532	1.307	0.671	98.494
Bowen/Surat	437.235	42.131	37.363	30.194	23.732	22.667	21.895	23.025	26.451	29.523	22.884	717.101
Browse	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Canning	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Carnarvon	2,746.624	562.179	595.482	648.772	756.518	663.322	665.546	648.136	699.979	723.322	829.161	9,539.041
Cooper/Eromanga	3,038.503	169.830	183.673	204.368	242.120	231.525	254.445	240.954	306.640	248.759	194.374	5,315.190
Gippsland	4,071.820	233.079	204.827	222.485	208.359	194.232	211.890	236.610	218.953	233.079	316.987	6,352.321
Gunnedah	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Otway	10.453	4.662	4.838	5.050	5.474	8.299	13.808	12.996	18.258	18.717	11.018	113.573
Perth	509.807	11.195	13.773	5.368	17.198	9.111	9.323	8.370	6.675	6.886	10.241	607.948
Total	10,990.169	1,046.525	1,063.193	1,139.615	1,276.390	1,154.937	1,201.275	1,192.270	1,296.520	1,278.897	1,399.216	23,039.007

Appendix J
2004

Australian petroleum pipelines, 2004

APPENDIX J: AUSTRALIAN PETROLEUM PIPELINES, 2004

Pipeline licence	Location/Route	Operator	Product	Length (km)	Pipe diameter (mm)	Period constructed
QUEENSLAND						
ONSHORE						
1	Moonie to Brisbane	Moonie Pipeline Co Pty Ltd	Oil	306	273	1964
2	Wallumbilla (Roma) to Brisbane	APT Petroleum Pipelines Ltd	Gas	397, 37	273, 324	1969
3	Kincora to Wallumbilla	Oil Co of Aust Ltd	Gas	53	219	1977
4	Silver Springs to Wallumbilla	Santos (BOL) Pty Ltd	Gas	102	219	1978
6	Jackson to Moonie	Santos Ltd	Oil	800	324	1983-84
7	MLIA to Wallumbilla	Elgas Ltd	Propane and Butane	14	60	1984
8	Tickalara to Cooroo	Santos Ltd	Oil	115	114	1989
9	Kenmore to Eromanga	Inland Oil Refiners Qld P/L	Oil	18	89	1989
10	Arcturus Separation Plant to PPL30	Oil Co of Aust Ltd	Gas	107	168	1990
11	Central Treatment Plant to PPL30	Oil Co of Aust Ltd	Gas	41	168	1989
12	Epsilon to SA Border	Santos Ltd	Gas	18	273	1992
13	Qld. Gas Centre (Ballera) to Moomba (See PL5 South Australia)	Santos Ltd	Gas and Condensate	90	400	1993
14	Patroclus to Tickalara/Cooroo Line	Santos Ltd	Oil	15	80	1993
15	PPL24 to Barcaldine	Australian Gasfields Ltd	Gas	420	168	1994-97
16	Judga to Munkah	Santos Ltd	Gas	13	219	1993
17	Munkah to QGC	Santos Ltd	Gas	13.5	356	1993
18	Yanda to QGC	Santos Ltd	Gas	8	324	1993
19	Dinmore lateral	Gas Corp of Qld	Gas	1.2	168	1993
20	Namarah to Yarrabend	Oil Co of Aust	Gas	45	168	1994
21	SA border to NSW border	East Australian Pipeline Ltd	Gas	56	864	1974
22	Major to Boxleigh	Angari Pty Ltd	Gas	16	89	1994
23	SA border to NSW border	Gorodok Pty Ltd	Ethane	38	219	1974-76
24	Ballera to Wallumbilla	Tenneco Energy Queensland Pty Ltd	Gas	750	406	1996
30	Gladstone to Rockhampton	Duke Queensland Pipeline Pty Ltd	Gas	100	219	1991
30	Wallumbilla to Gladstone	Duke Queensland Pipeline Pty Ltd	Gas	530	324	1989-90
31	Roti to Judga	Santos Ltd	Gas	-	-	1996
32	Gatton to Gympie	Allgas Pipeline Operations Pty Ltd	Gas	239	150	Under construction
34	Stokes to SA Border	Santos Ltd	Gas	7	300	1996
35	Challum to Ballera Gas Centre	Santos Ltd	Gas	15	400	1996
36	Karmona to Ballera Gas Centre	Santos Ltd	Gas	15	300	1996
37	Wackett to Ballera Gas Centre	Santos Ltd	Gas	15	200	1996
38	Okotoko to Karmona	Santos Ltd	Gas	10	200	1996
39	Wippo to Okotoko	Santos Ltd	Gas	10	200	1996
40	Yawa to Munkah	Santos Ltd	Gas	5	150	1996
41	Ballera to Mt Isa	Roverton Pty Ltd	Gas	841	324	1997

APPENDIX J (cont'd)

Pipeline licence	Location/Route	Operator	Product	Length (km)	Pipe diameter (mm)	Period constructed
42	PPL41 to Carrington	AGL Pipelines (Qld) Pty Ltd	Gas	100	100, 150	1998
45	Bunya/Vernon/Cocos to Central Treatment Plant	Australian Gasfields Ltd	Gas	130	–	1998
47	Mt Howitt to Wippo	Santos Limited	Gas	75	200	Under construction
48	Wolgolla to Epsilon	Santos Limited	Gas	16	250	Under construction
49	Mica Creek Meter Station to Power Station	Mount Isa Mines Ltd	Gas	1	508, 114	1998
50	Mica Creek Meter Station	Roverton Pty Ltd	Gas	–	324	1998
51	Mica Creek to Mt Isa	Roverton Pty Ltd	Gas	6.2	168, 89	1998
53	Central Treatment Plant to PPL41	Australian Gasfields Ltd	Gas	42.6	168	Under construction
54	PPL41 to Phosphate Hill	WMC Fertilisers	Gas	4.5	323	Operational
55	PPL24 to Roma Power Station	Boral Energy Electric Ltd	Gas	14.1	114.3	Operational
58	Downlands to PPL 4	Mosaic Oil NL	Gas	8.5	114.3	Operational
62	Karri to Wackett	Santos Ltd	Gas	17.3	150	Operational
68	Wackett South manifold to Wackett pipeline riser	Santos Ltd	Gas	7.9	150, 200	Under construction
69	Okotoko East No. 1 wellhead to Okotoko pipeline riser	Santos Ltd	Gas	3.3	100, 150	Under construction
70	Wippo South No. 1 wellhead to Judga North No. 1 wellhead	Santos Ltd	Gas	6.5	100, 200	Under construction
71	Chiron Field manifold to Stokes Field manifold	Santos Ltd	Gas	10.5	150, 250	Under construction
72	Wills No1 Wellhead to Stokes Field Manifold	Santos Ltd	Gas	18.5	150, 250	2001
78	Barrolka Nort East No 1 to Barrolka No 3 (in PL112)	Santos Ltd	Gas	6.5	150, 400,	2002
79	Quasar No1 to Stokes Field Manifold	Santos Ltd	Gas	5.50	150, 300	2002
80	Thoar No 1 to Wolgolla No 2	Santos Ltd	Gas	55	150, 300	2002
81	Winninia No 1 to Baryulah Field Manifold	Santos Ltd	Gas	15	200, 400	2002
82	Wippo East No 1 Wellhead to Wippo No 1	Santos Ltd	Gas	4	100, 250	2002
84	Tellus South No 1 to Tellus No 1	Santos Ltd	Gas	1.2	100, 300	2003
85	Talinga Gas Field to the Roma to Brisbane Pipeline (PPL2)	Origin Energy CSG Ltd	Gas	10	168.3	
86	Moon No 1 to Qld/SA Border	Santos Ltd	Gas	4.30	100, 200	2003
87	Churchie Plant to Silver Springs to Wallumbilla Pipeline	Santos Ltd	Gas	5	150	2003
88	Rockhampton branch line to AMC plant at Stanwell	Australian Magnesium Operations Pty Ltd	Gas	22.20	219	2003
94	Thoar No 1 to Psyche No 1	Santos Ltd	Gas	6	75, 200	granted 2004
95	Thoar No 1 to Psyche No 1	Santos Ltd	Fuel gas	26	150, 450	granted 2004
96	Raffle No1 to the Patroclus manifold	Santos Ltd	Gas	16	100, 300	granted 2004
98	Surlow No 1 to Okotoko West No 1	Santos Ltd	Gas	2.5	100, 200	granted 2004
101	Hebe No1 to Vega No 2	Santos Ltd	Gas	8	100, 50	granted 2004

APPENDIX J (cont'd)

Pipeline licence	Location/Route	Operator	Product	Length (km)	Pipe diameter (mm)	Period constructed
103	Condamine to braemar	Wambo Power Ventures Pty Ltd	Gas	80	406	granted 2004
105	Goora No 1 to Dingera No 1	Santos Ltd	Gas	16	100-250	granted 2004
106	Lytton	Caltex Refineries (Qld) Ltd	Oil	2.5	219, 610	granted 2004
NEW SOUTH WALES						
ONSHORE						
na	Moomba to MW10 (loopline)	East Australian Pipeline Ltd	Gas	10	660	1984
1	Wilton to Horsley Park	The Australian Gas Light Co Ltd	Gas	52	864	1976
2	Wilton to Wollongong	The Australian Gas Light Co Ltd	Gas	32	508	1978
3	Horsley Park to Plumpton	AGL Gas Networks Ltd	Gas	10	168	1976
4, 5, 6	Botany Bay to Rosehill	Shell Oil Australia, SMP Company	Petroleum	28	na	1977
7	Plumpton to Killingworth	The Australian Gas Light Co Ltd	Gas	141	508	1982
8	Killingworth to Walsh Point	Newcastle Gas Co Pty Ltd (AGL)	Gas	32.9	508, 355	1982
15	Moomba to Wilton	East Australian Pipeline Ltd	Ethane	1 375	219	1997
16	Moomba (Qld border) to Wilton (Sydney)	East Australian Pipeline Ltd	Gas	1 142	864	1974-76
17	Young to Lithgow	East Australian Pipeline Ltd	Gas	212	168	1986-87
17	Young to Bathurst Spur	East Australian Pipeline Ltd	Gas	2	114	1986-87
18	Young to Oberon Spur	East Australian Pipeline Ltd	Gas	21	168	1987-88
19	Young to Wagga Wagga	East Australian Pipeline Ltd	Gas	131	324, 89	1980-81
20	Junee to Griffith/Leeton	East Australian Pipeline Ltd	Gas	180	168, 114	1993
21	Dalton to Canberra	East Australian Pipeline Ltd	Gas	52	273	1981
22	Young to Orange Spur	East Australian Pipeline Ltd	Gas	24	114	1986-87
23	Culcairn to Wagga Wagga	East Australian Pipeline Ltd	Gas	88	457	1998
24	Vic/NSW border to Culcairn (from Barnawatha)	Transmission Pipelines Australia	Gas	57	457	1999
25	Marsden to Dubbo	AGL Pipelines (NSW) Pty Ltd	Gas	255	168, 219	1998
26	Vic/NSW to Wilton	Duke Energy	Gas	467	450	2000
27	Dubbo to Tamworth/Gunnedah	Central Ranges Pipeline Pty Ltd	Gas	254	-	Under construction
28	Illabo to Tumut	Country Energy Gas	Gas	64	200	2001
29	Hoskinstown to NSW/ACT border	Agility Management Pty Ltd	Gas	22	250	2001
VICTORIA						
OFFSHORE						
PL 4	Barracouta to Shore	Esso Aust Resources Ltd	Oil	18.9	150	1969
PL 1	Barracouta A to Gippsland gas processing plant	Esso Australia Resources Ltd	Oil and Gas	18.5	450	1967
PL 2	Marlin A to shore (Vic/PL and Vic/PL(V))	Esso Australia Resources Ltd	Gas	47	500	1967
PL 5	Halibut to shore (Vic/PL and Vic/PL(V))	Esso Australia Resources Ltd	Oil	71	600	1969
PL 6	Kingfish A to Kingfish B	Esso Australia Resources Ltd	Oil	4.5	400	1969
PL 7	Kingfish B to Halibut A	Esso Australia Resources Ltd	Oil	26.9	500	1969
PL 8	Mackerel A to Halibut A	Esso Australia Resources Ltd	Oil	9.2	300	1975

APPENDIX J (cont'd)

Pipeline licence	Location/Route	Operator	Product	Length (km)	Pipe diameter (mm)	Period constructed
PL 9	Tuna A to Marlin A	Esso Australia Resources Ltd	Oil	18.	300	1975
PL10	Tuna A to Marlin A	Esso Australia Resources Ltd	Gas	18.7	200	1975
PL11	Marlin to Halibut to shore pipeline (Vic/PL5)	Esso Australia Resources Ltd	Liquid and Hydrocarbons	1.6	300	1975
PL13	Snapper A to shore (Vic/PL and Vic/PL(V))	Esso Australia Resources Ltd	Oil and Gas	31	600	1979
PL14	West Kingfish to Kingfish A	Esso Australia Resources Ltd	Oil	3.5	300	1981
PL15	Cobia to Halibut A	Esso Australia Resources Ltd	Oil	5.5	300	1982
PL16	Fortescue to Halibut A	Esso Australia Resources Ltd	Oil	4.1	300	1982
PL17	Flounder to Tuna A	Esso Australia Resources Ltd	Oil and Gas	16.7	250	1983
PL18	Flounder to Tuna A	Esso Australia Resources Ltd	Oil and Gas	16.7	250	1983
PL19	Snapper A to Marlin A	Esso Australia Resources Ltd	Oil	17.8	250	1983
PL20	Bream to West Kingfish	Esso Australia Resources Ltd	Oil	32	400	1987
PL21	Perch Monotower to shore (Vic/PL and Vic/PL(V))	Esso Australia Resources Ltd	Oil	26.4	300	1989
PL22	Seahorse subsea well to Barracouta A	Esso Australia Resources Ltd	Oil	11.3	150	1989
PL23	Tarwhine to Barracouta A	Esso Australia Resources Ltd	Oil	17.4	200	1989
PL24	Whiting to Snapper A	Esso Australia Resources Ltd	Oil	14.6	250	1989
PL25	Whiting to Snapper A	Esso Australia Resources Ltd	Gas and Oil	14.6	200	1989
PL26	Bream B to Bream A	Esso Australia Resources Ltd	Oil and Gas	6.2	250	1996
PL27	West Tuna to Tuna A	Esso Australia Resources Ltd	Oil and Gas	3.5	100	1996
PL28	West Tuna to Tuna A	Esso Australia Resources Ltd	Oil	3.6	250	1996
SL 1	Cobia Sub-sea to Mackerel A	Esso Australia Resources Ltd	Oil	-	-	Revoked Sep 1984
SL 2	Marlin A to Halibut A to Mackerel A	Esso Australia Resources Ltd	Fuel gas	31.5	100	1990
SL 5	Perch to Dolphin to shore	Esso Australia Resources Ltd	Fuel gas	26.4	100	1989
SL 3	Cobia to Halibut A	Esso Australia Resources Ltd	Fuel gas	5.5	100	1990
SL 4	Fortescue to Halibut A	Esso Australia Resources Ltd	Fuel gas	4.1	100	1990
SL 5 & SL 5(v)	Perch to Dolphin to shore	Esso Australia Resources Ltd	Gas	32.6	100	1989
SL 6	Seahorse to Barracouta A	Esso Australia Resources Ltd	Gas	11.3	65	1989
SL 7	Tarwhine to Barracouta A	Esso Australia Resources Ltd	Fuel gas	17.4	65	1989
SL 8	Blackback Termination to Mackerel	Esso Australia Resources Ltd	Fuel gas	22.7	65	1998
SL 9	Marlin to West Kingfish and Kingfish A & B	Esso Australia Resources Ltd	Fuel gas	53	150	1998
PL34	Tas/Vic Border to Victorian 3 mile limit (Yolla)	Origin Energy Resources Ltd	Gas and liquid	68.10	350	2003
PL36	Vic/Tas Border to Victorian 3 mile limit (Thylacine)	Woodside Energy Ltd	Gas and liquid	56	500	2004
PL37	Casino Gas Field to Victorian 3 mile limit	Santos Ltd	Gas	30	323	2005
PL29	Blackback wells to Mackerel Platform	Esso Aust Resources Ltd	Oil	22.7	200	1998
PL30	Vic/Tas sea boundary to 3 mile limit	DEI Tasmania Holdings P/L	Gas	93.0	350	2001

APPENDIX J (cont'd)

Pipeline licence	Location/Route	Operator	Product	Length (km)	Pipe diameter (mm)	Period constructed
PL31	Patricia-Baleen subsea wells to 3 mile limit	Trinity Gas Resources Pty Ltd	Gas and liquid	19.7	324	2002
PL32	Bream A to 3 mile	Esso Australia Resources Ltd	Gas	41.5	350	2001
PL33	Minerva to 3 mile	BHP Billiton Petroleum (Victoria) Pty Ltd	Gas and liquid	15	250	2002
ONSHORE						
73	Williamstown dock to Altona	Mobil Refining Australia Pty Ltd	Liquids	7	450	1972
70,71	Altona	Mobil Refining Australia P/L	Liquids	0.73	300	1971
1	Mean low water level (Barracouta) to Gippsland gas processing plant	Esso Australia Resources Ltd	Liquids or Gas	24.67	450	1969
2	Mean low water level (Marlin) to Gippsland Gas Processing Plant	Esso Australia Resources Ltd	Liquids or Gas	55.1	500	1969-70
3	Crib Point to Dandenong	Crib Point Terminal Pty Ltd	Liquids	36.59	200	1968
5	Shell Newport to South Dynon Railway Yards	Shell Company of Australia Ltd	Liquids	7.4	100	1968
6	Shell Geelong to Lara Gas Plant	Shell Company of Australia Ltd	LPG	3.54	100	1968
7	Shell Geelong to Shell Newport	Shell Company of Australia Ltd	Liquids (White Oil)	53.13	200	1968
8	Shell Geelong to Shell Newport	Shell Company of Australia Ltd	Liquids (Black Oil)	56.35	200	1968
9	Newport to Coode Island Terminal	BP Australia Pty Ltd	Liquids	4.99	150	1968
10	Shell Geelong to Corio Quay	Shell Company of Australia Ltd	Liquids	3.98	200	1968
11	BP Western Port to Dandenong	Vic Gas Distribution Pty Ltd	Gas	39.1	300	1969
13	Dandenong to Highett	United Energy & Multinet Gas DB1 & DB2	Gas	17.9	300	1969
14	Highett to Spencer St Bridge	United Energy	Gas	19.7	300	1969
16	Altona to Derrimut	SPI Networks (Gas) Pty Ltd	Gas	6.4	100	1969
17	Derrimut to West Melbourne	SPI Networks (Gas) Pty Ltd	Gas	15.7	150	1969
18	Footscray to Sunshine	SPI Networks (Gas) Pty Ltd	Gas	12.03	200, 300, 400	1968
19	West Footscray to Williamstown	SPI Networks (Gas) Pty Ltd	Gas	8.8	400, 300, 200	1968
22	Port Melbourne to Newport	BP Australia Ltd	Liquids	6.1	200	1968
23	Spotswood to Newport	Caltex Oil (Australia) Pty Ltd	Liquids	0.48	300	1969
25	Spotswood to Newport	Caltex Oil (Australia) Pty Ltd	Liquids	0.44	150	1968
26	Spotswood to Newport	Caltex Oil (Australia) Pty Ltd	Liquids	0.44	150	1968
27	Gippsland gas processing plant to Cranbourne/Hastings	Esso Australia Resources Ltd	LPG	173.08	250	1968
28	Ringwood to Vermont	United Energy	Gas	3.5	200	1968
33	Dandenong to Edithvale	United Energy	Gas	11.6	150	1968
34	Cranbourne/Hastings to Long Island Point	Esso Australia Resources Ltd & BHP Billiton Petroleum (Bass Strait) Pty Ltd	Liquids	12.4	250	1968
35	Dutson to Hastings	Esso Australia Resources Ltd	Liquids	185.2	700	1969
36	Dandenong to West Melbourne	GasNet Australia (Operations) P/L	Gas	37	200, 750	1969
37, 38	Altona, Yarraville, Spotswood	Mobil Refining (Aust) Pty Ltd	Liquids	8.1	150	1969

APPENDIX J (cont'd)

Pipeline licence	Location/Route	Operator	Product	Length (km)	Pipe diameter (mm)	Period constructed
39	Termination Halibut submarine to Gippsland gas processing plant	Esso Australia Resources Ltd	Oil	55.2	650	1969
40	Dandenong to Templestowe	United Energy	Gas	37	450	1969
42	Termination Barracouta subm. to Gippsland gas processing plant	Esso Australia Resources Ltd	Liquids and Gas	32	150	1969
43	Longford to Sale	Vic Gas Distribution Pty Ltd	Gas	15	100	1969
44	Sale to Maffra	Vic Gas Distribution Pty Ltd	Gas	16.5	100	1969
46	Long Island Point to Crib Point	Esso Australia Resources Ltd	Liquids	10.8	1050	1969
47	Dandenong Terminal to Industrial Plants	United Energy	Gas	3.06	150, 80	1969
49	Dandenong to Frankston	Vic Gas Distribution P/L	Gas	24	200	1970
50	Dandenong to Morwell with branch lines	GasNet Australia (Operations) P/L	Gas	127.2	450, 100, 75	1970
51	Ringwood to Croydon	United Energy	Gas	6.5	250	1970
53	Hastings to Altona	Esso Australia Resources Ltd	Ethane	78.3	250	1970
54	Fawkner to Coburg	SPI Networks (Gas) Pty Ltd	LPG	4.5	150,250	1970
55	Altona to Spotswood	Mobil Refining (Aust) Pty Ltd	Liquids	6.9	250, 150	1970
56	Dandenong to West Melbourne with branch lines	United Energy	Gas	43.7	450, 300, 200, 150	1970
57	Corio/Belmont/Point Henry	SPI Networks (Gas) Pty Ltd	Gas	24.5	350, 250, 200	1970
58, 59, 60	Yarraville to Spotswood	BP Australia Ltd	Liquids	1.58	300, 200	1970
61	Hastings to Tyabb	Vic Gas Distribution Pty Ltd	Gas	3.44	250,80	1970
62	Tyabb to Mornington	Vic Gas Distribution Pty Ltd	Gas	12.6	150	1970
63	Golden Beach to Longford (Loopline)	Esso Australia Resources Ltd	Liquids or Gas	28.5	750	1971
64	Fawkner to Craigieburn	SPI Networks (Gas) Pty Ltd	Gas	10.5	150,200,250	1971
65	Tyabb/Altona/Corio	WAG Pipeline Pty Ltd	Liquids	135.9	600, 450	1971
66	North Melbourne to Fairfield	Vic Gas Distribution Pty Ltd	Gas	11.6	250	1971
67	Tyers to Maryvale	GasNet Australia (Operations) P/L	Gas	5.4	150	1971
68	Pakenham	GasNet Australia (Operations) P/L	Gas	1.2	80	1971
69,72	Altona	Mobil Refining (Aust) Pty Ltd	Liquids	11.24	150, 200, 250, 300, 450	1972
75	Longford to Dandenong	GasNet Australia (Operations) P/L	Gas	174.2	750	1971
76	Maidstone to Braybrook	SPI Networks (Gas) Pty Ltd	Gas	4.1	300	1971
77	Croydon to Mooroolbark	United Energy	Gas	3.4	250	1972
78	Brooklyn/Ballarat/Bendigo	GasNet Australia (Operations) P/L	Gas	180.1	200, 150	1972
80	North Geelong to Fyansford	SPI Networks (Gas) Pty Ltd	Gas	4.93	350	1972
81	Brooklyn to Corio	GasNet Australia (Operations) P/L	Gas	50.7	350, 400	1972
82	Sunshine to Sunshine North	SPI Networks (Gas) Pty Ltd	Gas	1.2	300	1972
84	Yarraville	SPI Networks (Gas) Pty Ltd	Gas	2.78	100, 150, 200	1973

APPENDIX J (cont'd)

Pipeline licence	Location/Route	Operator	Product	Length (km)	Pipe diameter (mm)	Period constructed
85	Bangholme	Vic Gas Distribution Pty Ltd	Gas	2.1	150	1973
87	Along Bayview Rd, Hastings	BOC Gases Australia Ltd	Compressed air	1.1	50,150,200	1975
90	Exford to Melton	SPI Networks (Gas) Pty Ltd	Gas	8	150	1974
91	Lardner to Warragul	GasNet Australia (Operations) P/L	Gas	4.8	100	1974
92 - 94	Yarraville to Spotswood	Mobil Oil Australia Ltd	Liquids	1.25	250, 150	1974
96	Longford	Esso Australia Resources Ltd	Gas	1.4	600	1975
97	Corio	SPI Networks (Gas) Pty Ltd	Gas	0.57	200	1975
98	Lake Reeve	Esso Australia Resources Ltd	Gas	26.6	750	1975
99	Fyansford to Waurn Ponds	SPI Networks (Gas) Pty Ltd	Gas	12.6	250	1975
100	Mooroolbark to Lilydale	United Energy	Gas	4.8	250	1975
101	Keon Park/Wodonga/Shepparton	GasNet Australia (Operations) P/L	Gas	318	300, 200, 600	1975
102	Wodonga	Vic Gas Distribution P/L	Gas	5.05	200	1975
103	Shepparton	Vic Gas Distribution P/L	Gas	10.28	200	1975
104	Lascelles Wharf to PCC Geelong	Pivot Ltd	Sulphuric acid	.38	300	1975
107	Clyde North	GasNet Australia (Operations) P/L	Gas	2	100	1975
108	South Melbourne to Brooklyn	GasNet Australia (Operations) P/L	Gas	12.8	750	1976
109	Altona to West Footscray	BOC Gases Australia Ltd	Nitrogen	6.7	90	1976
110	Altona to Footscray	BOC Gases Australia Ltd	Hydrogen	6.7	50	1976
111	Altona to Footscray	BOC Gases Australia Ltd	Propylene	6.7	50	1976
112	Altona to West Footscray	Huntsman Chemical Company Australia Ltd	Ethane	6.5	250	1976
113	Brooklyn to Altona	SPI Networks (Gas) Pty Ltd	Gas	4.9	500, 300	1976
115	John Lysaght Hastings	Vic Gas Distribution Pty Ltd	Gas	1.58	250	1977
116	Termination submarine to Valve Site 1	Esso Australia Resources Ltd	Gas	1.3	600	1977
117	Rosedale to Tyers	GasNet Australia (Operations) P/L	Gas	34.3	750	1978
118	Altona to Somerton	Mobil Oil Australia Ltd	Liquids	34	350	1978
119	Somerton to Tullamarine	Mobil Oil Australia Ltd	Liquids	11	150	1978
120	Longford to Rosedale	GasNet Australia (Operations) P/L	Gas	30.5	750	1978
121	Tyers to Morwell	GasNet Australia (Operations) P/L	Gas	15.7	500	1978
122	Derrimut to Sunbury	GasNet Australia (Operations) P/L	Gas	24	150	1979
124	Newport	GasNet Australia (Operations) P/L	Gas	1	450	1979
125	Guildford to Maryborough	GasNet Australia (Operations) P/L	Gas	31.4	150	1980
126	Longford to Westbury	BHP Billiton Petroleum (Bass Strait) Pty Ltd	Liquids	87	700	1980
128	Mt Franklin to Kyneton	GasNet Australia (Operations) P/L	Gas	24	300	1980
129	Dandenong to Princes Highway	GasNet Australia (Operations) P/L	Gas	5	750, 500	1980

APPENDIX J (cont'd)

Pipeline licence	Location/Route	Operator	Product	Length (km)	Pipe diameter (mm)	Period constructed
130	Altona	Quenos Olefins P/L	Gas	3.74	200,250	1980
131	Mt Franklin to Bendigo	GasNet Australia (Operations) P/L	Gas	50.8	300	1980
132	Shepparton to Tatura	GasNet Australia (Operations) P/L	Gas	16.2	200	1981
133	Longford Plant to Metering Station	Esso Australia Resources Ltd	Gas	1.14	600, 350	1981
134	Ballan to Ballarat	GasNet Australia (Operations) P/L	Gas	22.8	300	1981
135	Bunyip to Pakenham	GasNet Australia (Operations) P/L	Gas	18.7	750	1981
136	Tatura to Kyabram	GasNet Australia (Operations) P/L	Gas	21.3	200	1982
137	Bittern to Dromana	Stratus Pty Ltd	Gas	19	200	1982
138	Altona	Petro Altona P/L	LPG	2.3	150	1981
139	Langwarrin to Frankston	Vic Gas Distribution P/L	Gas	8	200	1982
141	Pakenham to Woolert	GasNet Australia (Operations) P/L	Gas	93.1	750	1982
142	Knox to Shire of Sherbrooke	United Energy	Gas	6	150	1983
143	Wandong to Kyneton	GasNet Australia (Operations) P/L	Gas	59	300	1984
144	Altona	Quenos Olefins P/L	LPG	3	80	1985
145	Paaratte to Allansford	GasNet Australia (Operations) P/L	Gas	34	150	1985-86
149	Via Dolphin with landfall at Seaspray	Esso Australia Resources Ltd	Oil and Gas	19.4	300	1989
150	Via landfall at Seaspray and Dolphin	Esso Australia Resources Ltd	Oil and Gas	17.8	100	1989
151	Altona	Cabot Australia P/L	LPG	1.35	300	1989
152	Kyabram to Echuca	GasNet Australia (Operations) P/L	Gas	30.7	150	1990
153	Crib Pt to Hastings	Trafigura terminals Australia P/L	Liquids	9.4	300	1990
154	Altona North	Air Liquide Australia Ltd	Oxygen	1.78	150	1989
155	Allansford to Portland	GasNet Australia (Operations) P/L	Gas	100.4	150	1991
157	Hastings	BOC Gases Australia	Compressed air	1.2	250	1991
162	Laverton North	GasNet Australia (Operations) P/L	Gas	1.6	150	1993
164	Port Melbourne to Boundary Road	GasNet Australia (Operations) P/L	Gas	0.4	150	1993
167	Dromana to Rye	Vic Gas Distribution P/L	Gas	17.3	200	1993
168	Curdievale to Cobden	Vic Gas Distribution P/L	Gas	27.7	150	1993
171	Codrington to Hamilton	GasNet Australia (Operations) P/L	Gas	54.5	150	1994
172	Crib Pt to Long Island Pt to Dandenong (previously licensed under PL11 & 12)	Elgas Reticulation Pty Ltd	LPG	43	100	1994
175	Longford to Vic/NSW border	Duke Energy	Gas	277	450	Under construction
176	Chiltern to Rutherglen	GasNet Australia (Operations) P/L	Gas	14.7	200	1998

APPENDIX J (cont'd)

Pipeline licence	Location/Route	Operator	Product	Length (km)	Pipe diameter (mm)	Period constructed
177	Drouin to Bunyip	GPU Gas Net Pty Ltd	Gas	13.6	750	1998
178	Barnawatha to NSW border	GasNet Australia (Operations) P/L	Gas	5.5	450	1998
179	Carisbrook to Horsham	Coastal Gas Pipelines Victoria Pty Ltd	Gas	182	200, 100	1998
182	Rutherglen to Koonoomoo	GasNet Australia (Operations) P/L	Gas	88.8	200	1998
183	Colac to Lara	GPU Gas Net Pty Ltd	Gas	94.8	500	na
184	Ararat, Stawell, Horsham City Gates	SPI Networks (Gas) Pty Ltd	Gas	1	80	1997
186	Rutherglen City Gate	Vic Gas Distribution P/L	Gas	1	80	1998
187	Yarrowonga, Cobram and Koonoomoo City Gates	Vic Gas Distribution P/L	Gas	1	80	1998
188	Ballarat City Gate to Dana St	SPI Networks (Gas) Pty Ltd	Gas	7.1	200	1998
189	Bendigo City Gate to Able St	SPI Networks (Gas) Pty Ltd	Gas	9.2	200	1998
190	Derrimut, Bacchus Marsh, Ballan, Wallace, Daylesford, Rockbank and Castlemaine City Gates	SPI Networks (Gas) Pty Ltd	Gas	1	100, 80, 50	1998
191	Sydenham, Diggers Rest and Sunbury City Gates	SPI Networks (Gas) Pty Ltd	Gas	1	80, 50	1998
192	Kyneton City Gate	SPI Networks (Gas) Pty Ltd	Gas	1	80	1998
193	Maryborough City Gate	SPI Networks (Gas) Pty Ltd	Gas	1	80	1998
194	Allansford City Gate	SPI Networks (Gas) Pty Ltd	Gas	1	100	1998
195	Koroit City Gate	SPI Networks (Gas) Pty Ltd	Gas	1	50	1998
196	Portland City Gate to Portland Smelter	SPI Networks (Gas) Pty Ltd	Gas	15.8	200	1998
197	Brooklyn City Gate to Somerville Rd	SPI Networks (Gas) Pty Ltd	Gas	1.7	400	1998
198	Hoppers Crossing, Werribee, Laverton North, Kerbrook, Lara and Avalon City Gate	SPI Networks (Gas) Pty Ltd	Gas	1	100, 80	1998
199	Cobden City Gate	SPI Networks (Gas) Pty Ltd	Gas	1	80	1998
200	Hamilton City Gate	SPI Networks (Gas) Pty Ltd	Gas	1	80	1998
201	Templestowe to Keon Park East	Vic Gas Distribution P/L	Gas	16.5	450	1998
202	Keon Park East to Keon Park West	GPU Gas Net Pty Ltd	Gas	0.6	450	1998
203	Keon Park West to North Melbourne	SPI Networks (Gas) Pty Ltd	Gas	25	450	1998
204	Cecil St to Pickles St	United Energy	Gas	1.4	200	1998
205	Oakleigh, Clayton, Noble Park, Malvern and St Kilda East City Gates and Yarra Bank Road Spurline	United Energy	Gas	1	300, 150, 100, 80	1998
206	Pakenham City Gate	Vic Gas Distribution Pty Ltd	Gas	1	80	1998
207	Queens Wharf Road City Gate	Vic Gas Distribution Pty Ltd	Gas	1	150	1998
208	North Melbourne to West Melbourne	Vic Gas Distribution Pty Ltd	Gas	3.5	450	1998
209	Howe Parade and Lorimer St Port Melbourne City Gate	United Energy	Gas	1	100	1998
210	Gembrook City Gate	United Energy	Gas	1	80	1998

APPENDIX J (cont'd)

Pipeline licence	Location/Route	Operator	Product	Length (km)	Pipe diameter (mm)	Period constructed
211	Healesville City Gate	Vic Gas Distribution Pty Ltd	Gas	1	80	1998
212	Warragul City Gate	Vic Gas Distribution Pty Ltd	Gas	1	100	1998
213	Clyde North City Gate	Vic Gas Distribution Pty Ltd	Gas	1	100	1998
214	Firmans Lane City Gate Morwell	Vic Gas Distribution Pty Ltd	Gas	1	80	1998
215	Tramway Rd Morwell	Vic Gas Distribution Pty Ltd	Gas	4.85	80	1998
216	Moe, Churchill, Yarragon, Trafalgar, Drouin South, Darnum, Longwarry, Lyndhurst, Huon Park Road, Cranbourne Road and Cranbourne North City Gates	Vic Gas Distribution Pty Ltd	Gas	1	100, 80, 75, 25	1998
217	Hampton Park, Narre Warren, Berwick, Traralgon and Rosedale City Gates	Vic Gas Distribution Pty Ltd	Gas	1	80	1998
218	Kyabram and Merrigum City Gates	Vic Gas Distribution Pty Ltd	Gas	1	80	1998
219	Wodonga City Gate to Murray River	Vic Gas Distribution Pty Ltd	Gas	8.3	300, 200	1998
220	Chiltern, Wallan, Broadford, Puckapunyal, Seymour, Euroa, Benalla, Monsbent, Wangaratta, Wangaratta East and Epping City Gates	Vic Gas Distribution Pty Ltd	Gas	1	100, 80, 60	1998
221	Craigieburn City Gates	SPI Networks (Gas) Pty Ltd	Gas	1	100	1998
222	Tatura City Gate	Vic Gas Distribution Pty Ltd	Gas	1	80	1998
223	Kilmore City Gate	Vic Gas Distribution Pty Ltd	Gas	1	50	1998
224	Echuca and Tongala City Gates	Vic Gas Distribution Pty Ltd	Gas	1	100, 80	1998
226	SA/Vic border to Mildura	Envestra Ltd	Gas	105.2	100	1999
227	Iona to North Paaratte	Western Underground Gas Storage Pty Ltd	Gas	7.1	150	1999
228	Shelley Beach Two Mile Bay to Minerva	BHP Billiton Petroleum (Victoria) Pty Ltd	Gas	4.5	400	2002
230	Mean low water mark to Orbost	Santos Ltd	Gas	12.5	400	2001
231	Iona to Lara	GasNet Australia (Operations) P/L	Gas	143.9	500	2000
232	Longford to NSW Border and East Coast Power Plant Bairnsdale	Duke Eastern Gas Pipeline Pty Ltd	Gas	280.57	168, 450, 610	2000
233	Bream A seaspray to site 3	Esso Australia Resources Ltd	Gas	5.8	300	2000
234	Traralgon to Loy Yang Power Station	Edison Mission Energy	Gas	13	300	2001
235	Colac City Gate	SPI Networks (Gas) Pty Ltd	Gas	1	80	2001
236	Longford to Shore Crossing near Seaspray	DEI Tasmanian Holdings P/L	Gas	20	450	2001
237	McIntee well to Fenton/Mylor	Santos Ltd	Gas	12.02	200	2001
238	Somerton	GasNet Australia P/L	Gas	3.4	250	2001
239	Victoria to South Australia	South East Australia Gas P/L	Gas	210	355	2002
240	Otway Basin to Heytesbury gas plant	Santos Ltd	Gas	8.5	219	2002
242	Port Campbell to Iona	GasNet Australia (Operations) P/L	Gas	9	500	2002

APPENDIX J (cont'd)

Pipeline licence	Location/Route	Operator	Product	Length (km)	Pipe diameter (mm)	Period constructed
243	Kilcunda to gas processing Lang Lang	Origin Energy Resources Ltd	Gas and liquid	32	350	2003
244	Proposed gas processing plant near Lang Lang	Origin Energy Resources Ltd	Gas	31	250	2003
247	EGP and TGP to GasNet Longford to Dandenong	DEI Vic Hub P/L	Gas	2.1	250	2002
74	Altona to Williamstown dock, Spotwood and Yarraville	Mobil Refining Australia Pty Ltd	Liquids	11	150	1972
88	Hastings	BOC Gases Australia Ltd	Hydrogen	1.2	50	1975
89	Hastings	BOC Gases Australia Ltd	Nitrogen	1.1	150	1975
95	Yarraville to Spotswood	Mobil Oil Aust Ltd	Liquids	1.5	250	1974
158	Laverton North to Deer Park	Coogee Energy Pty Ltd	Methanol	6.17	80	1993
159	Laverton North	Coogee Energy Pty Ltd	Methanol	3.87	80	1993
160	Altona North to Laverton North	Air Liquide Australia Ltd	Oxygen	2.54	150	1993
161	Altona North to Laverton North	Air Liquide Australia Ltd	Nitrogen	11.94	150,80	1993
173	Altona North to Laverton North	Air Liquide Australia Ltd	Oxygen	1.4	300	1995
250	Port Campbell Rifle Range to gas plant Waarre Road	Woodside Energy Ltd	Gas	11.5	750	2004
251	Casino gas field (offshore Otway basin) to storage facility Iona	Santos Ltd	Gas	11.0	323	2004
252	within Monivae Subdivision to Douglas mineral separation plant	GasNet Australia (Operations) Pty Ltd	Gas	1.10	100	2005
253	Intersection PP/PL81 & James St to Laverton North meter station	GasNet Australia (Operations) Pty Ltd	Gas	1.60	350	2005
254	SEA Gas pipeline to Pipeline supplying Gas Facility Penola SA	Origin Energy Retail Ltd	Gas		200	2005
255	Meter station Poolajelo to Katnook & Ladbroke Grove Gas Facility	Origin Energy Retail Ltd	Gas	22.0	200	2005

SOUTH AUSTRALIA

ONSHORE

PL1	Port Douglas Lateral	Epic Energy SA Pty Ltd	Gas	11.5	114	1988
PL1	Tarac	Epic Energy SA Pty Ltd	Gas	0.4	89	1988
PL1	Port Bonython lateral	Epic Energy SA Pty Ltd	Gas	5.5	168	1988-89
PL1	Dry Creek lateral	Epic Energy SA Pty Ltd	Gas	1.3	324	1969
PL1	Whyalla lateral	Epic Energy SA Pty Ltd	Gas	87.7	200	1988-89
PL1	Mintaro lateral	Epic Energy SA Pty Ltd	Gas	0.3	220	1969
PL1	Port Pirie lateral	Epic Energy SA Pty Ltd	Gas	77.8	170	1969
PL1	Burra lateral	Epic Energy SA Pty Ltd	Gas	15	989	1969
PL1	Taperoo lateral	Epic Energy SA Pty Ltd	Gas	1.2	324	1969
PL1	Wasleys to Torrens Is loop	Epic Energy SA Pty Ltd	Gas	41.5	508	1969
PL1	Angaston lateral	Epic Energy SA Pty Ltd	Gas	38.7	220	1969
PL1	Moomba to Adelaide	Epic Energy SA Pty Ltd	Gas	781	560	1969
PL1	Osbourne lateral	Epic Energy SA Pty Ltd	Gas	1.3	273	1988
PL1	Nuriootpa lateral	Epic Energy SA Pty Ltd	Gas	1.6	114	1969
PL1	Peterborough lateral	Epic Energy SA Pty Ltd	Gas	1.9	90	1969
na	Big Lake to Moomba	Epic Energy SA Pty Ltd	Gas	10	450	1976

APPENDIX J (cont'd)

Pipeline licence	Location/Route	Operator	Product	Length (km)	Pipe diameter (mm)	Period constructed
na	Toolachee to Della	Epic Energy SA Pty Ltd	Gas	37	750	1984
na	Big Lake satellite (new to old)	Epic Energy SA Pty Ltd	Gas	10.4	500	1976
na	Dullingari to Strzelecki tee	Epic Energy SA Pty Ltd	Liquids	21	168	1982
na	Tirrawarra to Moomba	Epic Energy SA Pty Ltd	Gas	49.2	500	1982
na	Moomba South Central to Moomba	Epic Energy SA Pty Ltd	Gas	11	450	1975
na	Tirrawarra to Moomba	Epic Energy SA Pty Ltd	Oil	49.2	250	1982
na	Daralingie to Moomba	Epic Energy SA Pty Ltd	Gas	44	500	1984
na	Mudrangie to Tirrawarra (abandoned)	Epic Energy SA Pty Ltd	Condensate/ Gas	20.3	150	1982
na	Fly Lake to Tirrawarra	Epic Energy SA Pty Ltd	Oil	15	250	1983
na	Fly Lake to Tirrawarra	Epic Energy SA Pty Ltd	Gas	15	400	1983
na	Moorari to Tirrawarra	Epic Energy SA Pty Ltd	Gas	13.5	200	1983
na	Strzelecki to Strzelecki tee	Epic Energy SA Pty Ltd	Liquids	12	168	1983
PL2	Moomba to Point Bonython	Santos Ltd	Liquids	659	355	1982
na	Strzelecki tee to Moomba	Epic Energy SA Pty Ltd	Liquids	48	219	1983
na	Gidgealpa to Moomba	Epic Energy SA Pty Ltd	Gas	25.6	400	1970
na	Kidman to Dullingari	Epic Energy SA Pty Ltd	Gas	15.5	300	1984
na	Epsilon to Moomba	Epic Energy SA Pty Ltd	Gas	90	250	1992
na	Munkarie 4 to Toolachee	Epic Energy SA Pty Ltd	Gas	3.6, 14.9	300, 406	1984
PL3	Katnook to SAFRIES	Epic Energy SA Pty Ltd	Gas	4.5	60	1990
na	Burke to Dullingari	Epic Energy SA Pty Ltd	Gas	5.7	406	1982
na	Dullingari to Della to Moomba	Epic Energy SA Pty Ltd	Oil	48.2, 20.6	168, 219	1984
na	Strzelecki to Dullingari / Moomba tie-in	Epic Energy SA Pty Ltd	Oil	12.3	168	1984
na	Kurunda to Gidgealpa satellite	Epic Energy SA Pty Ltd	Gas	16.5	219	1988
na	Meranji to Merrimelia Satellite	Epic Energy SA Pty Ltd	Oil	16.5	100	1986
na	Merrimelia Satellite to Tirrawarra/Moomba tie-in	Epic Energy SA Pty Ltd	Oil	16.5	168	1982
na	Leleptian to Fly Lake	Epic Energy SA Pty Ltd	Gas	16.5	200	1989
na	Dullingari to Della	Epic Energy SA Pty Ltd	Gas	24.8	750	1981
na	Della to Moomba	Epic Energy SA Pty Ltd	Gas	42.6	750	1980
na	Bookabourdie to Tirrawarra	Epic Energy SA Pty Ltd	Condensate/ Gas	43.8	324	1988
na	Moomba to Moomba SC	Epic Energy SA Pty Ltd	Ethane (reinjection)	9.1, 41.4	273, 324	1984, 1988
na	Wancoocha to Moomba	Epic Energy SA Pty Ltd	Oil	58.3	100	1985
na	Gidgealpa to Moomba	Epic Energy SA Pty Ltd	Oil	20.6	150	1985
PL4	Katnook/Glencoe to Mount Gambier & Snuggery	Epic Energy SA Pty Ltd	Gas	67	168	1991
PL5	Ballera to Moomba (See PL13 Queensland)	Santos Ltd	Gas and Condensate	92	400	1993
PL6	Angaston to Berri lateral Sedan Junction to Murray Bridge	Ayers Network Ltd	Gas	231	114	1994
PL7	Moomba to Qld border (Moomba-Sydney Gas Pipeline)	East Aust. Pipeline Gas Ltd	Gas	111 (10km loop incl.)	660, 864	1974

APPENDIX J (cont'd)

Pipeline licence	Location/Route	Operator	Product	Length (km)	Pipe diameter (mm)	Period constructed
PL8	Moomba- Sydney	ICI Aust Engineering P/L	Ethane	101	219	1996
PL9	SW Queensland-Mettika	Santos Ltd	Gas and Condensate	3.5	324	1996
PL10	Moomba Interconnection	Origin Energy Pipeline Pty Ltd	Gas	0.087	250	1999
PL11	Berri-Mildura	Envestra Ltd	Gas	42.3	114	1999
PL12	Beverley	Heathgate Resources P/L	Gas	14.3	89	2000
PL13	Iona to Adelaide	South East Australia Gas P/L	Gas	417	356	2003
PL15	SA/Qld border to Kerna	Santos Ltd	Gas	3	168.3	2003
PL16	SA/Vic3 border to Katnock/Ladbroke grove	Origin Energy Retail Ltd	Gas	22.7	219	2004
WESTERN AUSTRALIA						
OFFSHORE						
TPL1	Harriet A to Varanus Island	Apache Northwest Pty Ltd	Oil	6.5	219	1984
WA-1-PL	North Rankin A to Withnell Bay	Woodside Energy Ltd	Condensate /Gas	134	1 016	1983
WA-2-PL	Goodwyn to North Rankin A	Woodside Energy Ltd	Gas and Condensate	25	762	1993
TPL2	Varanus Island Export	Apache Northwest Pty Ltd	Oil	3.5	762	1985
TPL3	South Pepper to Airlie Is; South Pepper to North Herald	Ampolex (PPL) P/L	Oil	1.2	219	1987
WA-3-PL	Griffin FPSO to shore	BHP Petroleum (Aust) Pty Ltd	Gas	29.2	219	1993
TPL3	Varanus Island Export	Ampolex (PPL) P/L	Oil	23.7	168	1987
TPL4	Airlie Island to mooring terminal	Ampolex (PPL) P/L	Oil	1.94	508	1987
WA-4-PL	Wanaea FPSO to North Rankin A	Woodside Energy Ltd	Gas	32.3	324	1995
WA-5-PL	East Spar to Varanus Island	Apache East Spar Pty Ltd	Gas	41	356	1996
TPL5	Harriet A to Varanus Island	Apache Northwest Pty Ltd	Gas	6.3	168	1989
WA-6-PL	Stag oilfield production facility	Apache Northwest Pty Ltd	Oil	2	219	1997
TPL6	Saladin to Thevenard Island	ChevronTexaco Australia Pty Ltd	Oil and Gas	2.8	219	1989
TPL6	Saladin to Thevenard Island	ChevronTexaco Australia Pty Ltd	Oil and Gas	7.5	168	1989
TPL6	Saladin to Thevenard Island	ChevronTexaco Australia Pty Ltd	Oil	6.4	610	1989
TPL6	Saladin to Thevenard Island	ChevronTexaco Australia Pty Ltd	Gas	1.5	89	1989
TPL6	Saladin to Thevenard Island to mooring terminal	ChevronTexaco Australia Pty Ltd	Gas	5.	114	1989
TPL7	Chervil to Airlie Island	Ampolex (PPL) P/L	Gas/Water /Oil	6.4	210	1989
TPL8	Varanus Island to shore	Apache Northwest Pty Ltd	Gas	70	300	1992
TPL9	Barrow Island to mooring terminal	ChevronTexaco Australia Pty Ltd	Oil	10.4	508	1967
TPL10	Griffin FPSO to shore	BHP Petroleum (Australia) Pty Ltd	Gas	32.5	219	1994
TPL11	Roller A platform to shore	ChevronTexaco Australia Pty Ltd	Gas	8.5	168	1993
na	Roller A platform to Thevenard Island	West Australian Petroleum Pty Ltd	Oil/Gas	27	500	1994
TPL 12	East Spar to Varanus Island	Apache East Spar Pty Ltd	Condensate Gas/Water	21.8	356	1996
na	Thevenard Island to Roller A platform	West Australian Petroleum Pty Ltd	Gas	27	150	1994

APPENDIX J (cont'd)

Pipeline licence	Location/Route	Operator	Product	Length (km)	Pipe diameter (mm)	Period constructed
TPL13	Varanus Island to mainland	Apache East Spar Pty Ltd	Gas	70	406	1998-99
TPL14	Wonnich platform to Varanus Island	Apache Energy Ltd	Gas/Water/ Condensate	31	219	1998-99
ONSHORE						
	Hamersley lateral	Epic Energy (WA) Transmission Pty Ltd	Gas	3.7	200	1985
	Geraldton lateral	Epic Energy (WA) Transmission Pty Ltd	Gas	68	150	1985
PL1 R1	Dongara to Pinjarra (including Fremantle & Rockingham laterals)	CMS Gas Transmission of Australia Pty Ltd	Gas	445	356, 168, 114	1972
PL2 R1	Dongara to Pinjarra (including Fremantle & Rockingham laterals)	CMS Gas Transmission of Australia Pty Ltd	Gas	2.0	356, 168, 114	1972
PL3 R1	Dongara to Pinjarra (including Fremantle & Rockingham laterals)	CMS Gas Transmission of Australia Pty Ltd	Gas	445	356, 168, 114	1972
PL5 R1	Dongara to Pinjarra (including Fremantle & Rockingham laterals)	CMS Gas Transmission of Australia Pty Ltd	Gas	445	356, 168, 114	1972
PL6 R2	Woodada to Eneabba	Phoenix Energy Pty Limited	Gas	12	219	1982
PL7	Blina to Great Northern Highway	Capital Energy NL	Oil	29	114	1983
PL8	Karratha to Pt Lambert	Robe River Mining Co Pty Ltd	Gas	57	273	1984
PL9	Dampier (loading)	Woodside Petroleum Development Pty Ltd	Condensate	1	762	1984
PL12	Varanus Island	Apache Northwest Pty Ltd	Oil	0.26	762, 219	1985
PL14	Airlie Island	Apache Oil Australia Pty Ltd	Oil/Gas	0.64	508, 219	1987
PL15	Thevenard Island	ChevronTexaco Australia Pty Ltd	Oil/Gas	2.7	600, 168	1988
PL16	Tubridgi to Compressor Station No 2	Sagasco South East Inc	Gas	87.5	168	1992
PL17	Shore (Varanus Is) to Compressor Station No 1	Apache Northwest Pty Ltd	Gas	30	300	1992
PL18	Beharra Springs to WANG Pipeline	Boral Energy Developments Ltd	Gas	1.6	168	1992
PL19	Tubridgi Gas Plant to Compressor Station No 2	Sagasco South East Inc	Gas	87	273	1993
PL20	Shore to Griffin Gas Plant	BHP Petroleum Pty Ltd	Gas	6	219	1994
PL21	Shore to Tubridgi Gas Plant	West Australian Petroleum Pty Ltd	Gas	8	168	1990
PL22	Karratha to Port Hedland	Epic Energy (Pilbara Pipeline) Pty Ltd	Gas	213	450	1994
PL23	Wang Pipeline to SECWA Pipeline (Dongara area)	CMS Gas Transmission of Australia	Gas	0.5	168	1994
PL24	Yaraloola to Kalgoorlie	Duke Energy WA Power Pty Ltd	Gas	1 400	400, 350	1996
PL25	Mt Keith lateral	Southern Cross Pipelines (NPL) Aust Pty Ltd	Gas	8.1	219	1996
PL26	Leinster lateral	Southern Cross Pipelines Aust Pty Ltd	Gas	5.2	219	1996
PL27	Kambalda Nickel lateral	Southern Cross Pipelines Aust Pty Ltd	Gas	44.3	219	1996

APPENDIX J (cont'd)

Pipeline licence	Location/Route	Operator	Product	Length (km)	Pipe diameter (mm)	Period constructed
PL28	Parkerston Power Station	Southern Cross Pipelines (NPL) Aust Pty Ltd	Gas	8.2	219	1996
PL29	Lowendal Island	Apache East Spar Pty Ltd	Gas/Oil/ Water	0.6	356	1996
PL30	Varanus Island	Apache Oil Aust Pty Ltd	Gas/Oil/ Water	0.6	356	1996
PL31	Port Hedland	Epic Energy Pty Ltd	Gas	5	-	1996
na	Withnell Bay to Wagerup	Epic Energy (WA) Transmission Pty Ltd	Gas	1,488	650, 508	1984
na	Mungarra lateral	Epic Energy (WA) Transmission Pty Ltd	Gas	2.5	168	na
na	Viveash lateral	Epic Energy (WA) Transmission Pty Ltd	Gas	2.5	150	1985
na	Western Mining lateral	Epic Energy (WA) Transmission Pty Ltd	Gas	7	300, 150	1986
na	Eneabba lateral	Epic Energy (WA) Transmission Pty Ltd	Gas	7	100	1986
na	South Caversham lateral	Epic Energy (WA) Transmission Pty Ltd	Gas	0.5	100	1984
na	Worsley lateral	Epic Energy (WA) Transmission Pty Ltd	Gas	33	273	1984
PL32	Dongara area	AGL Pipelines (WA) Pty Ltd	Gas	10	-	1996
PL33	GGT pipeline's Wiluna Scraper Station to Wiluna Gold Pty Ltd plant site	AGL Pipelines (WA) Pty Ltd	Gas	8	89	1997
na	Hamersley lateral	Epic Energy (WA) Transmission Pty Ltd	Gas	0.5	219	1985
na	Pinjar lateral	Epic Energy (WA) Transmission Pty Ltd	Gas	14	355	na
na	Kwinana / Russell Rd	Epic Energy (WA) Transmission Pty Ltd	Gas	7.5	323	1986
na	Gascoyne Junction to Carnarvon	Epic Energy (WA) Transmission Pty Ltd	Gas	171	168	1987
na	Wagerup to Bunbury	Epic Energy (WA) Transmission Pty Ltd	Gas	42	273, 219	1984
na	East Perth lateral	Epic Energy (WA) Transmission Pty Ltd	Gas	17.5	250	1986
PL34	GGT pipeline's Wiluna Scraper Station to Jundee Gold Mine Plant site	Newmont Yandal Operations Ltd	Gas	45	114	1997
PL35	GGT Pipeline at Three Rivers to the Plutonic Gold Mine site	Plutonic Operations Ltd	Gas	19.2	114	1997
PL36	Offtake tee in GGT Pipeline 16km W of Leonora to the Murrin Murrin plant site	Origin Energy Pipelines Pty Ltd	Gas	85	219	1997
PL37	Flange on GGT Pipeline East of Broad Arrow to Cawse Nickel plant site	Centaur Nickel Pty Ltd	Gas	35	168	1997-98
PL38	Burru Gas Plant to Inlet station on Karratha to Port Hedland Pipeline	Epic Energy (WA) Transmission Pty Ltd	Gas	24	610	1998
PL39	Offtake tee in DBNGP to Cockburn Cement Plant near Dongara	Origin Energy Pipelines Pty Ltd	Gas	18	114	1998

APPENDIX J (cont'd)

Pipeline licence	Location/Route	Operator	Product	Length (km)	Pipe diameter (mm)	Period constructed
PL40	Dampier to Bunbury (DBNGP)	Epic Energy (WA) Transmission Pty Ltd	Gas	1 789	660	1984
PL41	Thomas Rd valve station to Tiwest Cogeneration Plant	Epic Energy (WA) Transmission Pty Ltd	Gas	580	168	1998
PL42	PL17 end flange to GGT Pipeline	Apache East Spar Pty Ltd	Gas	1	-	1998-99
PL43	Geraldton to Windimurra	AGL Pipelines (WA) Pty Ltd	Gas	365	219, 168	Under construction
PL44	Parmelia Pipelines to Canning Vale Gardens Industrial Estate	CMS Gas Transmission of Australia	Gas	1	200	Under construction
PL45	Parmelia Pipeline to Jandakot Wool Scourers in East Rockingham	CMS Gas Transmission of Australia	Gas	400	200	Under construction
PL46	Parmelia to Rocla Quarry Bullsbrook	CMS Gas Transmission of Australia	Gas			1999
PL47	Compressor Station No. 10 (Kwinana) to Rockingham lateral.	Epic Energy (WA) Transmission Pty Ltd	Gas	1	-	1999
PL48	GGT offtake, (approx 16km West of Leonora), to Leonora Power Station.	Statewest Power Pty Ltd	Gas	17	-	1999
PL49	Geraldton to Mt Magnet	Anaconda Nickel Ltd	Gas	na	406.4	Imminent either PL49 or PL50
PL50	Geraldton to Murrin Murrin plant	Anaconda Nickel Ltd	Gas	na	406.4	Imminent either PL49 or PL50
PL52	Parmelia to Tiwest	CMS Gas Transmission of Australia	Gas		114.3	2000
PL53	Parmelia to Kwinana	CMS Gas Transmission of Australia	Gas		219	2000
NORTHERN TERRITORY						
OFFSHORE						
NTC/PL1	Bayu-Undan coastal waters	ConocoPhillips (03-12) Pty Ltd	Gas and liquid	7	660	2005
NT/PL1	Bayu-Undan JPDA/NT to coastal waters	ConocoPhillips (03-12) Pty Ltd	Gas and liquid	255	660	2005
ONSHORE						
1	Palm Valley to Alice Springs	Holyman Limited/NT Gas Pty Ltd	Gas	146	219	1983
2	Mereenie to Alice Springs	Santos Ltd	Oil	269	219	1985
4	Palm Valley to Darwin	NT Gas Pty Ltd	Gas	1512	356, 324	1986
4	Mereenie to Tylers Pass	NT Gas Pty Ltd	Gas	116	324	1986
4	Tennant Creek lateral	NT Gas Pty Ltd	Gas	23	273	1986
4	Katherine lateral	NT Gas Pty Ltd	Gas	6.8	114	1986
5	Alice Springs	Envestra Ltd	Gas	0.52	50, 40	1988
6	Ampol ADO Darwin	Ampol Explor Ltd	Oil	1.86	150	1987
7	Brewer Estate	Central Energy Australia P/L	Gas	10	114	1989
8	Cosmo Howley lateral	International Oil Pty Ltd/NT Gas Pty Ltd	Gas	25	90	1988

APPENDIX J (cont'd)

Pipeline licence	Location/Route	Operator	Product	Length (km)	Pipe diameter (mm)	Period constructed
10	Elliot lateral	NT Gas Pty Ltd	Gas	4	60	1990
11	Manton Dam	NT Gas P/L	Gas	0.43	60.3	1989
15	Channel Island	Westfarmers Kleenheat Gas P/L	Gas	0.28	168, 89	1992
16	Alice Springs to Yirra college	Envestra Ltd	Gas	0.0013	50	1993
17	Daly Waters to McArthur River Mine	NT Gas Pty Ltd	Gas	333	168	1995
18	Darwin City Gate to Berrimah	NT Gas Pty Ltd	Gas	19	168	1996
19	Mt Todd Mine lateral	NT Gas Pty Ltd	Gas	10	219	1996
20	Bayu-Undan shore to processing	ConocoPhillips (03-12) Pty Ltd	Gas and liquid	117	660	2005

JOINT PETROLEUM DEVELOPMENT AREA

OFFSHORE

N/A	Bayu-Undan to JPDA/NT border	ConocoPhillips (03-12) Pty Ltd	Gas and liquid	0.30, 45	710, 660	2005
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AUSTRALIAN CAPITAL TERRITORY

ONSHORE

Gas Supply Act 1998	Fyshwick Regulator to ACT/NSW border (NSW PL 29)	Agility Management Pty Ltd	Gas	11	250	2001
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**Appendix K
2004**

**Key to petroleum exploration and
development titles**

Petroleum Titles by Companies

Listed below in alphabetical order are all companies that hold interest, whole or in part, in the current petroleum titles.

This list is cross-referenced with the "Key to Petroleum Exploration and Development Titles" which includes all petroleum exploration permits, retention leases and production licenses that were in force at 1/04/2005.

3D Oil PL	
<i>Victoria</i>	VIC/P57
Adenmere Pty Ltd	
<i>Queensland</i>	ATP587P
AGIP Australia Ltd	
<i>Northern Territory</i>	NT/P57
Air Liquide Australia Ltd	
<i>South Australia</i>	PPL 21
Alliance Minerals Australia Pty Ltd	
<i>Western Australia</i>	WA-6-R
Alliance Petroleum Australia Pty Ltd	
<i>South Australia</i>	PPL 6, PPL 7, PPL 8, PPL 9, PPL 10, PPL 11, PPL 12, PPL 13, PPL 14, PPL 15, PPL 16, PPL 17, PPL 18, PPL 19, PPL 20, PPL 22, PPL 23, PPL 24, PPL 25, PPL 27, PPL 28, PPL 29, PPL 30, PPL 31, PPL 32, PPL 33, PPL 34, PPL 35, PPL 36, PPL 37, PPL 38, PPL 39, PPL 40, PPL 41, PPL 42, PPL 43, PPL 44, PPL 45, PPL 46, PPL 47, PPL 48, PPL 49, PPL 50, PPL 51, PPL 52, PPL 53, PPL 54, PPL 55, PPL 56, PPL 57, PPL 58, PPL 59, PPL 60, PPL 61, PPL 63, PPL 64, PPL 65, PPL 66, PPL 68, PPL 69, PPL 70, PPL 71, PPL 72, PPL 73, PPL 74, PPL 75, PPL 78, PPL 79, PPL 80, PPL 81, PPL 82, PPL 83, PPL 84, PPL 85, PPL 86, PPL 87, PPL 88, PPL 89, PPL 90, PPL 91, PPL 92, PPL 93, PPL 94, PPL 95, PPL 96, PPL 97, PPL 98, PPL 99, PPL 100, PPL 101, PPL 102, PPL 103, PPL 104, PPL 105, PPL 106, PPL 107, PPL 108, PPL 109, PPL 110, PPL 111, PPL 113, PPL 114, PPL 115, PPL 116, PPL 117, PPL 119, PPL 120, PPL 121, PPL 122, PPL 123, PPL 124, PPL 125, PPL 126, PPL 127, PPL 128, PPL 129, PPL 130, PPL 132, PPL 133, PPL 134, PPL 135, PPL 137, PPL 138, PPL 139, PPL 140, PPL 141, PPL 143, PPL 144, PPL 145, PPL 146, PPL 148, PPL 149, PPL 150, PPL 151, PPL 153, PPL 154, PPL 155, PPL 157, PPL 159, PPL 160, PPL 161, PPL 162, PPL 163, PPL 164, PPL 165, PPL 166, PPL 169, PPL 170, PPL 171, PPL 172, PPL 173, PPL 174, PPL 175, PPL 176, PPL 177, PPL 178, PPL 179, PPL 180, PPL 181, PPL 183, PPL 184, PPL 185, PPL 186, PPL 188, PPL 189, PPL 190, PPL 192, PPL 193, PPL 195, PPL 196, PPL 198, PPL 199
Alpha Oil and Gas Pty Ltd	
<i>Western Australia</i>	WA-332-P, WA-333-P
Alpha Oil and Natural Gas Pty Ltd	
<i>Western Australia</i>	WA-341-P, WA-342-P
Amadeus Energy Limited	
<i>Western Australia</i>	EP 380
Ampolex (PPL) Pty Ltd	
<i>Western Australia</i>	TP/7, TL/2
Anadarko Australia Company Pty Ltd	
<i>South Australia</i>	EPP 28, EPP 29, EPP 30, EPP 31
Anadarko Canada Corporation	
<i>Territory of Ashmore and Cartier Islands Adjacent Area</i>	AC/L1, AC/L2, AC/L3
Angari Pty Ltd	
<i>Queensland</i>	ATP212P, PL21, PL22, PL27, PL30, PL56, PL64, PL71, PL74
Antares Energy Limited	
<i>Western Australia</i>	EP 425
Antrim Energy Australia Pty Ltd	
<i>Western Australia</i>	WA-306-P, WA-307-P
Anzon Australia Ltd	
<i>Victoria</i>	VIC/RL6, VIC/RL10
Anzon Energy Australia Ltd	
<i>Victoria</i>	VIC/RL9
Apache East Spar Pty Ltd	
<i>Western Australia</i>	WA-13-L
Apache Energy Limited	
<i>Victoria</i>	VIC/P54
Apache Harriet Pty Ltd	
<i>Western Australia</i>	WA-192-P
Apache Northwest Pty Ltd	
<i>Victoria</i>	VIC/P54, VIC/P58
<i>Western Australia</i>	WA-1-P, WA-155-P, WA-192-P, WA-202-P, WA-209-P, WA-214-P, WA-226-P, WA-246-P, WA-254-P, WA-256-P, WA-257-P, WA-261-P, WA-325-P, WA-327-P, WA-334-P, WA-335-P, WA-354-P, WA-355-P, WA-356-P, WA-357-P, TP/6, TP/8, TP/9, EP 363, WA-13-L, WA-15-L, WA-20-L, WA-29-L, TL/1, TL/5, TL/6, TL/8, TL/9, WA-12-R, TR/1, TR/2, TR/3, EP 307, EP 358
Apache Oil Australia Pty Ltd	
<i>Western Australia</i>	WA-149-P, TP/7, EP 409, WA-13-L, TL/2, WA-33-R
Apex Energy NL	
<i>New South Wales</i>	PEL442, PEL444
Arc Energy NL	
<i>Western Australia</i>	TP/15, EP 368, EP 413, EP 437, L 1, L 2, L 7, L 14
Arrow Energy NL	
<i>New South Wales</i>	PEL432
<i>Queensland</i>	ATP679P, ATP683P, ATP700P, ATP716P, ATP790P, PL198
Ashmore Oil Pty Ltd	
<i>Territory of Ashmore and Cartier Islands Adjacent Area</i>	AC/P22
<i>Western Australia</i>	WA-316-P
Associated Petroleum Pty Ltd	
<i>Queensland</i>	PL3, PL4, PL5, PL6, PL7, PL8, PL9, PL10, PL11, PL12, PL13, PL93
Auralandia NL	
<i>Territory of Ashmore and Cartier Islands Adjacent Area</i>	AC/P33
Ausam Resources NL	
<i>Queensland</i>	ATP682P, ATP754P
<i>Victoria</i>	PEP166
<i>Western Australia</i>	EP 23, EP 321, EP 407
Ausoil Exploration Pty Ltd	
<i>Western Australia</i>	EP 422
Australian Coalbed Methane Pty Ltd	
<i>New South Wales</i>	PEL1, PEL12, PEL435
<i>Queensland</i>	ATP574P, ATP676P, ATP689P, PL194
Australian Gasfields Ltd	
<i>Queensland</i>	ATP549P, PL23, PL24, PL25, PL26, PL35, PL36, PL62, PL65, PL76, PL77, PL78, PL79, PL82, PL87, PL105, PL107, PL109, PL115, PL116, PL133, PL149, PL175, PL181, PL182, PL184, PL189
Australian Natural Gas Pty Ltd	
<i>Northern Territory</i>	NT/P62, NT/P63, NT/P64, NT/P65
Australian-Canadian Oil Royalties Ltd	
<i>South Australia</i>	PEL 108, PEL 109, PEL 112
<i>Victoria</i>	VIC/P60
AWE (Perth Basin) Ltd	
<i>Western Australia</i>	EP 320, L 11
AWE Oil (Western Australia) Pty Ltd	
<i>Western Australia</i>	WA-286-P, TP/15
AWE Petroleum Pty Ltd	
<i>Tasmania</i>	T/18P, T/L1, T/RL1
<i>Western Australia</i>	WA-202-P
Azeeza Pty Ltd	
<i>Queensland</i>	ATP593P
Basin Oil NL	
<i>Northern Territory</i>	NT/RL3
<i>Victoria</i>	VIC/P55
<i>Western Australia</i>	WA-13-R
Basin Oil Pty Ltd	
<i>South Australia</i>	PPL 6, PPL 7, PPL 8, PPL 9, PPL 10, PPL 11, PPL 12, PPL 13, PPL 14, PPL 15, PPL 16, PPL 17, PPL 18, PPL 19, PPL 20, PPL 22, PPL 23, PPL 24, PPL 25, PPL 27, PPL 28, PPL 29, PPL 30, PPL 31, PPL 32, PPL 33, PPL 34, PPL 35, PPL 36, PPL 37, PPL 38, PPL 39, PPL 40, PPL 41, PPL 42, PPL 43, PPL 44, PPL 45, PPL 46, PPL 47, PPL 48, PPL 49, PPL 50, PPL 51, PPL 52, PPL 53, PPL 54, PPL 55, PPL 56, PPL 57, PPL 58, PPL 59, PPL 60, PPL 61, PPL 63, PPL 64, PPL 65, PPL 66, PPL 67, PPL 68, PPL 69, PPL 70, PPL 71, PPL 72, PPL 73, PPL 74, PPL 75, PPL 78, PPL 79, PPL 80, PPL 81, PPL 82, PPL 83, PPL 84, PPL 85, PPL 86, PPL 87, PPL 88, PPL 89, PPL 90, PPL 91, PPL 92, PPL 93, PPL 94, PPL 95, PPL 96, PPL 97, PPL 98, PPL 99, PPL 100, PPL 101, PPL 102, PPL 103, PPL 104, PPL 105, PPL 106, PPL 107, PPL 108, PPL 109, PPL 110, PPL 111, PPL 113, PPL 114, PPL 115, PPL 116, PPL 117, PPL 119, PPL 120, PPL 121, PPL 122, PPL 123, PPL 124, PPL 125, PPL 126, PPL 127, PPL 128, PPL 129, PPL 130, PPL 132, PPL 133, PPL 134, PPL 135, PPL 137, PPL 138, PPL 139, PPL 140, PPL 141, PPL 143, PPL 144, PPL 145, PPL 146, PPL 148, PPL 149, PPL 150, PPL 151, PPL 153, PPL 154, PPL 155, PPL 157, PPL 159, PPL 160, PPL 161, PPL 162, PPL 163, PPL 164, PPL 165, PPL 166, PPL 169, PPL 170, PPL 171, PPL 172, PPL 173, PPL 174, PPL 175, PPL 176, PPL 177, PPL 178, PPL 179, PPL 180, PPL 181, PPL 183, PPL 184, PPL 185, PPL 186, PPL 188, PPL 189, PPL 190, PPL 192, PPL 193, PPL 195, PPL 196, PPL 198, PPL 199
<i>Victoria</i>	VIC/L21, VIC/RL3, VIC/RL1(V)
Bass Strait Oil Company Pty Ltd	
<i>Victoria</i>	VIC/P41, VIC/P42, VIC/P47
Batavia Oil and Gas Pty Ltd	
<i>Western Australia</i>	WA-332-P, WA-333-P, WA-341-P, WA-342-P
Beach Petroleum Ltd	
<i>Queensland</i>	ATP269P, PL31, PL32, PL47, PL184
<i>South Australia</i>	PEL 72, PEL 91, PEL 92, PEL 94, PEL 95, PEL 107, PEL 110, PEL 136, PPL 204, PPL 205, PPL 210
<i>Victoria</i>	VIC/RL6, VIC/RL9, VIC/RL10, PPL6, PPL9, PPL10, PPL11, PPL1
<i>Western Australia</i>	WA-264-P
Beach Petroleum NL	
<i>Queensland</i>	PL32, PL47
<i>Victoria</i>	PEP154
<i>Western Australia</i>	WA-281-P

Beaconsfield Energy Development Pty Ltd	
<i>Queensland</i>	ATP529P
Benaris International NV	
<i>Tasmania</i>	T/30P, T/34P, T/39P, T/L2
<i>Victoria</i>	VIC/P43, VIC/P38(V), VIC/L23
BHP Billiton Petroleum (Australia) Pty Ltd	
<i>Western Australia</i>	WA-155-P, WA-255-P, WA-294-P, WA-354-P, WA-10-L, WA-12-L, WA-12-R
BHP Billiton Petroleum (Bass Strait) Pty Ltd	
<i>Victoria</i>	VIC/L1, VIC/L2, VIC/L3, VIC/L4, VIC/L5, VIC/L6, VIC/L7, VIC/L8, VIC/L9, VIC/L10, VIC/L11, VIC/L13, VIC/L14, VIC/L15, VIC/L16, VIC/L17, VIC/L18, VIC/L19, VIC/L20, VIC/RL4
BHP Billiton Petroleum (North West Shelf) Pty Ltd	
<i>Territory of Ashmore and Cartier Islands Adjacent Area</i>	AC/P30, AC/L5
<i>Western Australia</i>	WA-28-P, WA-275-P, WA-296-P, WA-297-P, WA-301-P, WA-302-P, WA-303-P, WA-304-P, WA-305-P, WA-322-P, WA-346-P, WA-351-P, WA-1-L, WA-2-L, WA-3-L, WA-4-L, WA-5-L, WA-6-L, WA-9-L, WA-11-L, WA-16-L, WA-18-L, WA-23-L, WA-24-L, WA-1-R, WA-7-R, WA-9-R, WA-10-R, WA-28-R, WA-29-R, WA-30-R, WA-31-R, WA-32-R, TR/5, RL 2
BHP Billiton Petroleum (Victoria) Pty Ltd	
<i>Victoria</i>	VIC/P45, VIC/L22, VIC/RL1, VIC/RL2, VIC/RL7
BHP Coal Pty Ltd	
<i>Queensland</i>	ATP364P, PL191
Black Rock Resources Australia, NL	
<i>Western Australia</i>	EP 419
Bligh Oil and Minerals NL	
<i>Queensland</i>	ATP552P
BNG (Surat) Pty Ltd	
<i>Queensland</i>	ATP645P, ATP684P, ATP688P, ATP693P, ATP722P, ATP767P, ATP768P
BNG Pty Ltd	
<i>New South Wales</i>	PEL445
<i>Queensland</i>	ATP641P, ATP644P, ATP791P
Bobwyns Pty Ltd	
<i>Queensland</i>	ATP621P
Boggy Creek Pty Ltd	
<i>Victoria</i>	PPL3
Bonaparte Gas and Oil Pty Ltd	
<i>Northern Territory</i>	NT/RL1
<i>Western Australia</i>	WA-18-P, WA-6-R, WA-27-R
Bonnerwell Pty Ltd	
<i>Queensland</i>	ATP619P
Boral Energy Northwest Ltd	
<i>Tasmania</i>	T/RL1
Bounty Oil and Gas NL	
<i>New South Wales</i>	PEP11(NSW)
<i>Territory of Ashmore and Cartier Islands Adjacent Area</i>	AC/P25
<i>Western Australia</i>	WA-324-P, WA-325-P, WA-327-P, EP 412, L 4, L 5
Bow Energy Ltd	
<i>Queensland</i>	ATP807P
BP Developments Australia Pty Ltd	
<i>Western Australia</i>	WA-28-P, WA-275-P, WA-1-L, WA-2-L, WA-3-L, WA-4-L, WA-5-L, WA-6-L, WA-9-L, WA-11-L, WA-16-L, WA-23-L, WA-24-L, WA-7-R, WA-9-R, WA-10-R, WA-28-R, WA-29-R, WA-30-R, WA-31-R, WA-32-R, TR/5, RL 2
BP Exploration (Alpha) Ltd	
<i>Western Australia</i>	WA-294-P, WA-296-P, WA-297-P, WA-22-R, WA-23-R, WA-24-R, WA-25-R, WA-26-R
Bridge Oil Developments Pty Ltd	
<i>South Australia</i>	PPL 6, PPL 7, PPL 8, PPL 9, PPL 10, PPL 11, PPL 12, PPL 13, PPL 14, PPL 15, PPL 16, PPL 17, PPL 18, PPL 19, PPL 20, PPL 22, PPL 23, PPL 24, PPL 25, PPL 27, PPL 28, PPL 29, PPL 30, PPL 31, PPL 32, PPL 33, PPL 34, PPL 35, PPL 36, PPL 37, PPL 38, PPL 39, PPL 40, PPL 41, PPL 42, PPL 43, PPL 44, PPL 45, PPL 46, PPL 47, PPL 48, PPL 49, PPL 50, PPL 51, PPL 52, PPL 53, PPL 54, PPL 55, PPL 56, PPL 57, PPL 58, PPL 59, PPL 60, PPL 61, PPL 63, PPL 64, PPL 65, PPL 66, PPL 67, PPL 68, PPL 69, PPL 70, PPL 71, PPL 72, PPL 73, PPL 74, PPL 75, PPL 78, PPL 79, PPL 80, PPL 81, PPL 82, PPL 83, PPL 84, PPL 85, PPL 86, PPL 87, PPL 88, PPL 89, PPL 90, PPL 91, PPL 92, PPL 93, PPL 94, PPL 95, PPL 96, PPL 97, PPL 98, PPL 99, PPL 100, PPL 101, PPL 102, PPL 103, PPL 104, PPL 105, PPL 106, PPL 107, PPL 108, PPL 109, PPL 110, PPL 111, PPL 113, PPL 114, PPL 115, PPL 116, PPL 117, PPL 119, PPL 120, PPL 121, PPL 122, PPL 123, PPL 124, PPL 125, PPL 126, PPL 127, PPL 128, PPL 129, PPL 130, PPL 132, PPL 133, PPL 134, PPL 135, PPL 137, PPL 138, PPL 139, PPL 140, PPL 141, PPL 143, PPL 144, PPL 145, PPL 146, PPL 148, PPL 149, PPL 150, PPL 151, PPL 153, PPL 154, PPL 155, PPL 157, PPL 159, PPL 160, PPL 161, PPL 162, PPL 163, PPL 164, PPL 165, PPL 166, PPL 169, PPL 170, PPL 171, PPL 172, PPL 173, PPL 174, PPL 175, PPL 176, PPL 177, PPL 178, PPL 179, PPL 180, PPL 181, PPL 183, PPL 184, PPL 185, PPL 186, PPL 188, PPL 189, PPL 190, PPL 192, PPL 193, PPL 195, PPL 196, PPL 198, PPL 199
Bridge Oil Exploration Pty Ltd	
<i>Queensland</i>	ATP212P, PL30, PL56, PL74
Brisbane Petroleum NL	
<i>Queensland</i>	ATP755P, PL18, PL40
CalEnergy Gas (Australia) Ltd	
<i>Tasmania</i>	T/18P, T/30P, T/34P, T/L1, T/L2, T/RL1
<i>Victoria</i>	VIC/P43, VIC/L23
<i>Western Australia</i>	EP 437

Canso Resources Ltd	
<i>Northern Territory</i>	L3, L4, L5, RL2
Cantel Petroleum Pty Ltd	
<i>Queensland</i>	ATP548P
Capital Consultant Services Pty Ltd	
<i>Western Australia</i>	EP 321, EP 407
Capricorn Energy Pty Ltd	
<i>Queensland</i>	ATP529P
Camarvon Petroleum NL	
<i>Western Australia</i>	EP 110
CH4 Pty Ltd	
<i>Queensland</i>	ATP364P, ATP727P, ATP748P, ATP751P, ATP753P, PL191, PL196, PL223
Chevron Australia Pty Ltd	
<i>Western Australia</i>	WA-17-R
ChevronTexaco Australia Pty Ltd	
<i>Western Australia</i>	WA-28-P, WA-205-P, WA-253-P, WA-275-P, WA-294-P, WA-296-P, WA-297-P, TP/2, WA-1-L, WA-2-L, WA-3-L, WA-4-L, WA-5-L, WA-6-L, WA-7-L, WA-9-L, WA-11-L, WA-16-L, WA-23-L, WA-24-L, TL/3, TL/4, TL/7, WA-2-R, WA-3-R, WA-4-R, WA-5-R, WA-7-R, WA-9-R, WA-10-R, WA-14-R, WA-15-R, WA-16-R, WA-19-R, WA-20-R, WA-21-R, WA-22-R, WA-23-R, WA-24-R, WA-25-R, WA-26-R, WA-28-R, WA-29-R, WA-30-R, WA-31-R, WA-32-R, TR/4, TR/5, EP 61, EP 62, EP 357, L 1H, L 10, L 12, L 13, RL 2
Cieco Browse Inc	
<i>Western Australia</i>	WA-286-P
Coastal Oil and Gas Australia Pty Ltd	
<i>Territory of Ashmore and Cartier Islands Adjacent Area</i>	AC/P20
Comet Ridge Limited	
<i>New South Wales</i>	PEL427, PEL428
<i>Queensland</i>	PL198
ConocoPhillips (03-13) Pty Ltd	
<i>Joint Petroleum Development Area</i>	JPDA 03-13
ConocoPhillips (03-16) Pty Ltd	
<i>Joint Petroleum Development Area</i>	JPDA 03-16
ConocoPhillips (03-19) Pty Ltd	
<i>Joint Petroleum Development Area</i>	JPDA 03-19
ConocoPhillips (03-21) Pty Ltd	
<i>Joint Petroleum Development Area</i>	JPDA 03-21
ConocoPhillips JPDA Pty Ltd	
<i>Joint Petroleum Development Area</i>	JPDA 03-13
ConocoPhillips Petroleum (03-12) Pty Ltd	
<i>Joint Petroleum Development Area</i>	JPDA 03-12
ConocoPhillips Petroleum (03-20) Pty Ltd	
<i>Joint Petroleum Development Area</i>	JPDA 03-20
ConocoPhillips STL Pty Ltd	
<i>Northern Territory</i>	NT/RL2
Coogee Resources (Ashmore Cartier) Pty Ltd	
<i>Territory of Ashmore and Cartier Islands Adjacent Area</i>	AC/P34, AC/L1, AC/L2, AC/L3, AC/RL3
Cooper Energy NL	
<i>South Australia</i>	PEL 88, PEL 92, PEL 93, PEL 100, PEL 110, PPL 204, PPL 205, PPL 207
Cooper-Eromanga Oil Inc	
<i>Queensland</i>	ATP582P
Cosmo Oil Ashmore Ltd	
<i>Territory of Ashmore and Cartier Islands Adjacent Area</i>	AC/RL4, AC/RL5
Cosmo Oil Company Ltd	
<i>Territory of Ashmore and Cartier Islands Adjacent Area</i>	AC/P17, AC/RL5
CPC Energy Pty Ltd	
<i>Queensland</i>	ATP299P, PL29, PL38, PL39, PL52, PL57, PL95, PL169, PL170
Crusader (Victoria) Pty Ltd	
<i>Victoria</i>	VIC/RL2
Crux S.A.	
<i>Territory of Ashmore and Cartier Islands Adjacent Area</i>	AC/P23
CS Energy Limited	
<i>Queensland</i>	PL194, PL201
Cue Petroleum Pty Ltd	
<i>Victoria</i>	VIC/P53
Dana Petroleum (E&P) Ltd	
<i>Western Australia</i>	WA-226-P
Dana Petroleum (WA) Ltd	
<i>Western Australia</i>	WA-226-P

David M. Schuette	
<i>South Australia</i>	PEL 73
Davidson Prospecting	
<i>New South Wales</i>	PEL428
Daytona Energy Corporation	
<i>Territory of Ashmore and Cartier Islands Adjacent Area</i>	AC/P32
Delbaere Associates Pty Ltd	
<i>Queensland</i>	PL18, PL40
Delhi Inter Oil Corp	
<i>Queensland</i>	PL108
Delhi Petroleum Pty Ltd	
<i>Queensland</i>	ATP259P, PL23, PL24, PL25, PL26, PL34, PL35, PL36, PL37, PL55, PL58, PL59, PL60, PL61, PL62, PL63, PL68, PL75, PL76, PL77, PL78, PL79, PL80, PL81, PL82, PL83, PL84, PL85, PL86, PL87, PL88, PL97, PL105, PL106, PL107, PL109, PL110, PL111, PL112, PL113, PL114, PL129, PL130, PL131, PL132, PL133, PL134, PL135, PL136, PL137, PL138, PL139, PL140, PL141, PL142, PL143, PL144, PL145, PL146, PL147, PL148, PL149, PL150, PL151, PL152, PL153, PL154, PL155, PL156, PL157, PL158, PL159, PL168, PL175, PL177, PL178, PL181, PL182, PL186, PL187, PL188, PL189, PL193, PL205, PL207, PL208
<i>South Australia</i>	PPL 6, PPL 7, PPL 8, PPL 9, PPL 10, PPL 11, PPL 12, PPL 13, PPL 14, PPL 15, PPL 16, PPL 17, PPL 18, PPL 19, PPL 20, PPL 22, PPL 23, PPL 24, PPL 25, PPL 26, PPL 27, PPL 28, PPL 29, PPL 30, PPL 31, PPL 32, PPL 33, PPL 34, PPL 35, PPL 36, PPL 37, PPL 38, PPL 39, PPL 40, PPL 41, PPL 42, PPL 43, PPL 44, PPL 45, PPL 46, PPL 47, PPL 48, PPL 49, PPL 50, PPL 51, PPL 52, PPL 53, PPL 54, PPL 55, PPL 56, PPL 57, PPL 58, PPL 59, PPL 60, PPL 61, PPL 63, PPL 64, PPL 65, PPL 66, PPL 67, PPL 68, PPL 69, PPL 70, PPL 71, PPL 72, PPL 73, PPL 74, PPL 75, PPL 76, PPL 77, PPL 78, PPL 79, PPL 80, PPL 81, PPL 82, PPL 83, PPL 84, PPL 85, PPL 86, PPL 87, PPL 88, PPL 89, PPL 90, PPL 91, PPL 92, PPL 93, PPL 94, PPL 95, PPL 96, PPL 97, PPL 98, PPL 99, PPL 100, PPL 101, PPL 102, PPL 103, PPL 104, PPL 105, PPL 106, PPL 107, PPL 108, PPL 109, PPL 110, PPL 111, PPL 113, PPL 114, PPL 115, PPL 116, PPL 117, PPL 118, PPL 119, PPL 120, PPL 121, PPL 122, PPL 123, PPL 124, PPL 125, PPL 126, PPL 127, PPL 128, PPL 129, PPL 130, PPL 131, PPL 132, PPL 133, PPL 134, PPL 135, PPL 136, PPL 137, PPL 138, PPL 139, PPL 140, PPL 141, PPL 142, PPL 143, PPL 144, PPL 145, PPL 146, PPL 147, PPL 148, PPL 149, PPL 150, PPL 151, PPL 152, PPL 153, PPL 154, PPL 155, PPL 156, PPL 157, PPL 158, PPL 159, PPL 160, PPL 161, PPL 162, PPL 163, PPL 164, PPL 165, PPL 166, PPL 167, PPL 169, PPL 170, PPL 171, PPL 172, PPL 173, PPL 174, PPL 175, PPL 176, PPL 177, PPL 178, PPL 179, PPL 180, PPL 181, PPL 182, PPL 183, PPL 184, PPL 185, PPL 186, PPL 187, PPL 188, PPL 189, PPL 190, PPL 191, PPL 192, PPL 193, PPL 194, PPL 195, PPL 196, PPL 197, PPL 198, PPL 199
Diamond Creek Coal Pty Ltd	
<i>Queensland</i>	ATP793P
Diamond Gas Resources Pty Ltd	
<i>Victoria</i>	VIC/P55
Drillsearch Energy Limited	
<i>Queensland</i>	PL181, PL182, PL189
<i>Western Australia</i>	WA-319-P, WA-352-P
Drillsearch Energy NL	
<i>Queensland</i>	ATP299P, PL23, PL24, PL25, PL26, PL29, PL35, PL36, PL38, PL39, PL52, PL57, PL62, PL76, PL77, PL78, PL79, PL82, PL87, PL95, PL105, PL107, PL109, PL133, PL149, PL169, PL170, PL175
<i>Western Australia</i>	WA-317-P, WA-318-P
Eagle Bay Resources NL	
<i>Territory of Ashmore and Cartier Islands Adjacent Area</i>	AC/P32
<i>Victoria</i>	VIC/P41, VIC/P47
<i>Western Australia</i>	WA-331-P, TP/21, EP 423
Eastern Energy Australia Pty Ltd	
<i>New South Wales</i>	PEL6
Eastern Star Gas Ltd	
<i>New South Wales</i>	PEL8, PEL238, PEL422, PEL424, PEL433, PEL434
Ely Sakhai	
<i>South Australia</i>	PEL 108, PEL 109, PEL 112
<i>Victoria</i>	VIC/P60
Emet Pty Ltd	
<i>Joint Petroleum Development Area</i>	JPDA 03-12
Empire Oil Company (WA) Ltd	
<i>Western Australia</i>	EP 389, EP 415, EP 416, EP 430
EnCana Corporation	
<i>Western Australia</i>	WA-34-R
Encana International (Australia) Pty Ltd	
<i>Territory of Ashmore and Cartier Islands Adjacent Area</i>	AC/P30
Eni (Australia) Pty Ltd	
<i>Western Australia</i>	WA-208-P
Eni Australia BV	
<i>Western Australia</i>	WA-279-P, WA-313-P, WA-326-P, WA-328-P, TP/22
Eni Australia Ltd	
<i>Territory of Ashmore and Cartier Islands Adjacent Area</i>	AC/P21
<i>Western Australia</i>	WA-280-P, WA-22-L, WA-25-L
Eni JPDA 03-13 Ltd	
<i>Joint Petroleum Development Area</i>	JPDA 03-13

Eni JPDA 03-21 BV	
<i>Joint Petroleum Development Area</i>	JPDA 03-21
Entek Energy Limited	
<i>South Australia</i>	PEL 86, PEL 87, PEL 89, PEL 104, PEL 111, PEL 115
Essential Petroleum Resources Ltd	
<i>South Australia</i>	PEL 72
<i>Victoria</i>	VIC/P46, VIC/P50, PEP151, PEP152, PEP159
Esso Australia Resources Pty Ltd	
<i>Victoria</i>	VIC/L1, VIC/L2, VIC/L3, VIC/L4, VIC/L5, VIC/L6, VIC/L7, VIC/L8, VIC/L9, VIC/L10, VIC/L11, VIC/L13, VIC/L14, VIC/L15, VIC/L16, VIC/L17, VIC/L18, VIC/L19, VIC/L20, VIC/RL1, VIC/RL2, VIC/RL4
<i>Western Australia</i>	WA-1-R
Euro Pacific Energy Pty Ltd	
<i>Western Australia</i>	EP 406, EP 110
Exoil Ltd	
<i>Tasmania</i>	T/37P, T/38P
Farmout Drillers Pty Ltd	
<i>Northern Territory</i>	L3, L4, L5, RL2
First Australian Resources Limited	
<i>Western Australia</i>	WA-254-P, EP 397, EP 104, RL 1
Frontier Bonaparte Pty Ltd	
<i>Northern Territory</i>	NT/RL3
<i>Western Australia</i>	WA-13-R
Galveston Mining Corporation Pty Ltd	
<i>Tasmania</i>	T/37P, T/38P
Gascorp Inc	
<i>Territory of Ashmore and Cartier Islands Adjacent Area</i>	AC/P33
Geary, John Kevin	
<i>Western Australia</i>	EP 413, L 14
Geopetro Resources Company	
<i>Western Australia</i>	EP 381, EP 408
Global Petroleum Limited	
<i>Queensland</i>	ATP728P
Goldborough Energy Pty Ltd	
<i>Western Australia</i>	WA-332-P, WA-333-P, WA-341-P, WA-342-P
Golden West Hydrocarbons Pty Ltd	
<i>Queensland</i>	PL17
Goodrich Petroleum Company	
<i>Western Australia</i>	EP 397
Grange Court Pty Ltd	
<i>Western Australia</i>	EP 427
Great Artesian Oil and Gas Ltd	
<i>Queensland</i>	ATP539P, ATP552P
<i>South Australia</i>	EPP 27, PEL 91, PEL 106, PEL 107
Great Southland Minerals Pty Ltd	
<i>Tasmania</i>	EL13/98
Gulf Energy Pty Ltd	
<i>Queensland</i>	Q/23P
Gulliver Productions Pty Ltd	
<i>Western Australia</i>	EP 104, EP 426, EP 432, EP 438, RL 1
Hamilbent Pty Ltd	
<i>Queensland</i>	ATP688P
Hardman Oil and Gas Pty Ltd	
<i>Territory of Ashmore and Cartier Islands Adjacent Area</i>	AC/P25, AC/RL1
<i>Western Australia</i>	TP/15, EP 110, EP 368, EP 413, L 4, L 5, L 14
Harlow Australia Pty Ltd	
<i>New South Wales</i>	PEL443
<i>Queensland</i>	ATP618P
Hawkestone Oil Pty Ltd	
<i>Western Australia</i>	WA-332-P, WA-333-P, WA-341-P, WA-342-P
Helm Energy Australia LLC	
<i>Queensland</i>	ATP564P, ATP602P
Holloman Corp	
<i>Victoria</i>	VIC/P60
Hughes and Hughes Australia Pty Ltd	
<i>South Australia</i>	PEL 105
Hyland Bay Pty Ltd	
<i>Queensland</i>	ATP552P
Icon Energy Ltd	
<i>Queensland</i>	ATP594P
<i>Western Australia</i>	WA-331-P, TP/21, EP 423
Indigo Oil Pty Ltd	
<i>Western Australia</i>	EP 104, EP 438, RL 1
Indo-Pacific Energy Australia Pty Ltd	
<i>Territory of Ashmore and Cartier Islands Adjacent Area</i>	AC/P19, AC/P26

Inland Oil (Production) Pty Ltd	
<i>Queensland</i>	ATP269P, PL23, PL24, PL25, PL26, PL35, PL36, PL62, PL76, PL77, PL78, PL79, PL82, PL87, PL98, PL105, PL107, PL109, PL133, PL149, PL175, PL181, PL182, PL184, PL189
Innamincka Petroleum	
<i>South Australia</i>	PEL 101, PEL 103
Innovative Technological Geo-Exploration Pty Ltd	
<i>Northern Territory</i>	EP69
<i>Queensland</i>	PL98
Impex Alpha Ltd	
<i>Tasmania</i>	T/33P
<i>Victoria</i>	VIC/P42, VIC/P45, VIC/P51, VIC/P52
<i>Western Australia</i>	WA-155-P, WA-10-L
Impex Browse Ltd	
<i>Western Australia</i>	WA-285-P
Impex Sahul Ltd	
<i>Joint Petroleum Development Area</i>	JPDA 03-12
Impex Timor Sea Ltd	
<i>Joint Petroleum Development Area</i>	JPDA 03-01
Interstate Pipelines Pty Ltd	
<i>Queensland</i>	ATP336P, PL3, PL4, PL5, PL6, PL7, PL8, PL9, PL10, PL11, PL12, PL13, PL28, PL69, PL89, PL93
IOR Exploration (NT) Pty Ltd	
<i>Northern Territory</i>	EP69
IOR Exploration Pty Ltd	
<i>Queensland</i>	ATP548P, PL98
Jagen Nominees Pty Ltd	
<i>Western Australia</i>	EP 380
Jakabar Pty Ltd	
<i>Queensland</i>	ATP626P
Japan Australia LNG (MIMI) Pty Ltd	
<i>Western Australia</i>	WA-28-P, WA-248-P, WA-269-P, WA-294-P, WA-296-P, WA-297-P, WA-1-L, WA-2-L, WA-3-L, WA-4-L, WA-5-L, WA-6-L, WA-9-L, WA-11-L, WA-16-L, WA-23-L, WA-24-L, WA-7-R, WA-9-R, WA-10-R
Karoon Gas Pty Ltd	
<i>Victoria</i>	PEP162
Kerr-McGee Australia Exploration and Production Pty Ltd	
<i>South Australia</i>	EPP 33
Kerr-McGee Exploration and Production Australia Pty Ltd	
<i>Western Australia</i>	WA-302-P
Kerr-McGee North West Shelf Australia Energy Pty Ltd	
<i>South Australia</i>	EPP 33
<i>Western Australia</i>	WA-301-P, WA-303-P, WA-304-P, WA-305-P, WA-337-P, WA-339-P, WA-34-R
Kimberley Oil NL	
<i>Western Australia</i>	EP 104, EP 371, EP 390, EP 391, EP 431, RL 1
Kimberly Energy Group Pty Ltd	
<i>Northern Territory</i>	RL1
<i>Western Australia</i>	EP 386
Kingston Petroleum Pty Ltd	
<i>Queensland</i>	ATP682P
Kingsway Resources 2001 Pty Ltd	
<i>Western Australia</i>	EP 429
Knight Industries Pty Ltd	
<i>Victoria</i>	PEP161, PEP165
Korea National Oil Corporation	
<i>Western Australia</i>	EP 408
Kreznel, Jan	
<i>Queensland</i>	ATP723P
Kufpec Australia Pty Ltd	
<i>Western Australia</i>	WA-191-P, WA-192-P, WA-246-P, WA-248-P, WA-257-P, WA-264-P, WA-335-P, WA-356-P, TP/8, EP 363, WA-8-L, WA-26-L, WA-27-L, TL/1, TL/5, TL/6, TL/8, TL/9, TR/1, TR/2, EP 307, EP 358
Lakes Oil NL	
<i>South Australia</i>	PEL 57, PEL 66
<i>Victoria</i>	PEP152
Lansvale Oil and Gas Pty Ltd	
<i>Western Australia</i>	EP 359, EP 433, EP 434, EP 435
Liberty Petroleum Corporation	
<i>Queensland</i>	ATP616P
<i>South Australia</i>	PEL 88, PEL 100
<i>Western Australia</i>	WA-314-P, WA-315-P
Lockshire Pty Ltd	
<i>Queensland</i>	ATP619P
Longreach Oil Ltd	
<i>Queensland</i>	ATP755P
<i>Western Australia</i>	EP 369, EP 405, EP 410
Longview Resources Ltd	
<i>Territory of Ashmore and Cartier Islands Adjacent Area</i>	AC/P22
Lowell Petroleum NL	
<i>Queensland</i>	ATP564P, ATP602P
Lucas Coal Seam Gas Pty Ltd	
<i>New South Wales</i>	PEL285
Magellan Petroleum (Eastern) Pty Ltd	
<i>Queensland</i>	ATP267P, ATP613P, PL33, PL50, PL51
Magellan Petroleum (NT) Pty Ltd	
<i>Northern Territory</i>	L3, L4, L5, RL2
<i>South Australia</i>	PEL 94, PEL 95, PPL 210
Magellan Petroleum (Southern) Pty Ltd	
<i>South Australia</i>	PEL 110
Magellan Petroleum (WA) Pty Ltd	
<i>Western Australia</i>	WA-291-P, WA-306-P, WA-307-P
Maneroo Oil Company Ltd	
<i>Queensland</i>	ATP556P, ATP566P
<i>Western Australia</i>	EP 438
Maple Oil NL	
<i>Queensland</i>	ATP552P
Mawson Petroleum Pty Ltd	
<i>Queensland</i>	ATP269P, PL23, PL24, PL25, PL26, PL31, PL32, PL35, PL36, PL47, PL62, PL76, PL77, PL78, PL79, PL82, PL87, PL105, PL107, PL109, PL133, PL149, PL175, PL181, PL182, PL184, PL189
<i>South Australia</i>	PPL 203
Meridian Resources Pty Ltd	
<i>South Australia</i>	PEL 82
Merlin Energy Pty Ltd	
<i>Northern Territory</i>	EP93
Metgasco Pty Ltd	
<i>New South Wales</i>	PEL16
Millennium Resources Qld Pty Ltd	
<i>Queensland</i>	ATP587P
Mirboo Ridge Pty Ltd	
<i>South Australia</i>	PEL 57
<i>Victoria</i>	PEP163, PEP164
Mitchell Gas Pty Ltd	
<i>Queensland</i>	ATP619P
Mitsui E&P Australia Pty Ltd	
<i>Western Australia</i>	WA-271-P, WA-28-L
Mittwell Energy Resources Pty Ltd	
<i>Victoria</i>	VIC/P44
Mobil (Legendre) Pty Ltd	
<i>Western Australia</i>	WA-14-L
Mobil Australia Resources Company Pty Ltd	
<i>Territory of Ashmore and Cartier Islands Adjacent Area</i>	AC/L1, AC/L2, AC/L3
<i>Western Australia</i>	WA-205-P, TP/2, WA-7-L, WA-12-L, WA-17-L, WA-22-L, WA-25-L, TL/3, TL/4, TL/7, WA-2-R, WA-3-R, WA-4-R, WA-5-R, WA-14-R, WA-16-R, WA-22-R, WA-23-R, WA-24-R, WA-25-R, WA-26-R, TR/4, EP 61, EP 62, EP 357, L 1H, L 10, L 12, L 13
Mobil Exploration and Producing Australia Pty Ltd	
<i>Western Australia</i>	WA-10-L, WA-18-R
Molopo Australia NL	
<i>New South Wales</i>	PEL13, PEL426
Moonie Oil Co Ltd	
<i>Northern Territory</i>	RL2
Moonie Oil Pty Ltd	
<i>Northern Territory</i>	L4, L5
Moroil Pty Ltd	
<i>Northern Territory</i>	EP69
<i>Queensland</i>	PL98
Mosaic Oil NL	
<i>Queensland</i>	ATP212P, PL30, PL46, PL48, PL49, PL56, PL74, PL119
<i>Western Australia</i>	WA-208-P
Mosaic Oil QLD Pty Ltd	
<i>Queensland</i>	ATP212P, ATP471P, ATP709P, PL15, PL16, PL56, PL66, PL74, PL192, PL202
Narrabri Power Limited	
<i>New South Wales</i>	PPL3(NSW)
National Energy Pty Ltd	
<i>South Australia</i>	EPP 34
National Oil and Gas Pty Ltd	
<i>Northern Territory</i>	NT/P62, NT/P63, NT/P64, NT/P65
Nations Natural Gas Pty Ltd	
<i>Northern Territory</i>	NT/P62, NT/P63, NT/P64, NT/P65
Natural Gas Australia Pty Ltd	
<i>Western Australia</i>	WA-343-P, WA-344-P

Natural Gas Corporation Pty Ltd

Territory of Ashmore and
Cartier Islands Adjacent
Area AC/P33

Neo Oil Pty Ltd

South Australia PEL 186, PEL 187

Nerdlihc Company Inc

Western Australia EP 374, EP 375, EP 376

Netscald Pty Ltd

Queensland ATP548P

New Acland Coal Pty Ltd

Queensland ATP812P

New Standard Exploration NL

Western Australia EP 417

Newfield Australia (Ashmore Cartier) Ltd

Territory of Ashmore and
Cartier Islands Adjacent
Area AC/P20

Nexen Petroleum Australia Pty Ltd

Western Australia WA-19-L, WA-21-L

Nexus Energy Australia NL

Northern Territory NT/P66
Victoria VIC/P49, VIC/P56, VIC/P39(V)

Nexus Energy Vic/P54 Pty Ltd

Victoria VIC/P54

Nippon Oil Exploration (Dampier) Pty Ltd

Western Australia WA-191-P, WA-26-L, WA-27-L

Norwest Energy NL

Western Australia EP 413, EP 419, L 14

Novus Australia Resources NL

South Australia PPL 6, PPL 7, PPL 8, PPL 9, PPL 10, PPL 11, PPL 12, PPL 13, PPL 14, PPL 15, PPL 16, PPL 17, PPL 18, PPL 19, PPL 20, PPL 22, PPL 23, PPL 24, PPL 25, PPL 26, PPL 27, PPL 28, PPL 29, PPL 30, PPL 31, PPL 32, PPL 33, PPL 34, PPL 35, PPL 36, PPL 37, PPL 38, PPL 39, PPL 40, PPL 41, PPL 42, PPL 43, PPL 44, PPL 45, PPL 46, PPL 47, PPL 48, PPL 49, PPL 50, PPL 51, PPL 52, PPL 53, PPL 54, PPL 55, PPL 56, PPL 57, PPL 58, PPL 59, PPL 60, PPL 61, PPL 63, PPL 64, PPL 65, PPL 66, PPL 67, PPL 68, PPL 69, PPL 70, PPL 71, PPL 72, PPL 73, PPL 74, PPL 75, PPL 76, PPL 77, PPL 78, PPL 79, PPL 80, PPL 81, PPL 82, PPL 83, PPL 84, PPL 85, PPL 86, PPL 87, PPL 88, PPL 89, PPL 90, PPL 91, PPL 92, PPL 93, PPL 94, PPL 95, PPL 96, PPL 97, PPL 98, PPL 99, PPL 100, PPL 101, PPL 102, PPL 103, PPL 104, PPL 105, PPL 106, PPL 107, PPL 108, PPL 109, PPL 110, PPL 111, PPL 113, PPL 114, PPL 115, PPL 116, PPL 117, PPL 118, PPL 119, PPL 120, PPL 121, PPL 122, PPL 123, PPL 124, PPL 125, PPL 126, PPL 127, PPL 128, PPL 129, PPL 130, PPL 131, PPL 132, PPL 133, PPL 134, PPL 135, PPL 136, PPL 137, PPL 138, PPL 139, PPL 140, PPL 141, PPL 142, PPL 143, PPL 144, PPL 145, PPL 146, PPL 147, PPL 148, PPL 149, PPL 150, PPL 151, PPL 152, PPL 153, PPL 154, PPL 155, PPL 156, PPL 157, PPL 158, PPL 159, PPL 160, PPL 161, PPL 162, PPL 163, PPL 164, PPL 165, PPL 166, PPL 167, PPL 169, PPL 170, PPL 171, PPL 172, PPL 173, PPL 174, PPL 175, PPL 176, PPL 177, PPL 178, PPL 179, PPL 180, PPL 181, PPL 182, PPL 183, PPL 184, PPL 185, PPL 186, PPL 187, PPL 188, PPL 189, PPL 190, PPL 191, PPL 192, PPL 193, PPL 194, PPL 195, PPL 196, PPL 197, PPL 198, PPL 199

NWE (ZOCA 96-16) Pty Ltd

Joint Petroleum Development
Area JPDA 03-16

Octanex NL

Western Australia WA-321-P, WA-323-P, WA-329-P, WA-330-P

Odyssey International Pty Ltd

Territory of Ashmore and
Cartier Islands Adjacent
Area AC/P19

OG ZOCA (95-19) Pty Ltd

Joint Petroleum Development
Area JPDA 03-19

OG ZOCA (96-20) Pty Ltd

Joint Petroleum Development
Area JPDA 03-20

Oil Company of Australia (Moura) Pty Ltd

Queensland ATP564P, ATP602P, PL94, PL101

Oil Investments Ltd

Queensland PL21, PL22, PL27, PL28, PL69, PL89

Oil Search (Australia) Pty Ltd

Western Australia WA-281-P

Oil Wells of Kentucky Inc

Queensland ATP560P

Oilex NL

Queensland ATP548P

OME Resources Australia Pty Ltd

Queensland ATP758P, ATP759P

Omega Oil Pty Ltd

South Australia PPL 62, PPL 168, PPL 202

OMV (Barrow) Pty Ltd

Western Australia WA-290-P, EP 409

OMV (Timor Sea) Pty Ltd

Northern Territory NT/RL3
Territory of Ashmore and
Cartier Islands Adjacent
Area AC/P4, AC/P17, AC/P24, AC/L1, AC/L2, AC/L3, AC/RL4, AC/RL5
Victoria VIC/L21
Western Australia WA-308-P, WA-309-P, WA-320-P, WA-345-P, WA-13-R

OMV Petroleum Pty Ltd

Western Australia WA-308-P, WA-309-P, WA-320-P, WA-345-P, WA-13-R

ONGC Videsh Ltd

Western Australia WA-306-P

Origin Energy Amadeus NL

Western Australia L 9

Origin Energy Bonaparte Pty Ltd

Northern Territory NT/RL1
Queensland PL43
Western Australia WA-6-R

Origin Energy CSG Ltd

Queensland ATP212P, ATP337P, ATP375P, ATP470P, ATP553P, ATP592P, ATP606P, ATP631P, ATP663P, ATP692P, ATP698P, ATP702P, PL14, PL21, PL22, PL27, PL28, PL30, PL41, PL42, PL44, PL45, PL53, PL54, PL56, PL64, PL67, PL69, PL70, PL71, PL74, PL89, PL101, PL173, PL174, PL183, PL195, PL200, PL203, PL204, PL209, PL219, PL220, PL226
South Australia PEL 27

Origin Energy CSG Marketing Pty Ltd

Queensland PL204

Origin Energy Developments Pty Ltd

Western Australia WA-226-P, EP 320, EP 368, EP 413, L 1, L 2, L 11, L 14

Origin Energy Northwest Ltd

Tasmania T/L1

Origin Energy Petroleum Pty Ltd

Victoria PEP159, PEP160, PPL8
Western Australia L 9

Origin Energy Resources Ltd

Queensland ATP682P, ATP754P, PL59, PL60, PL61, PL81, PL83, PL85, PL86, PL97, PL106, PL108, PL111, PL112, PL113, PL114, PL131, PL132, PL135, PL138, PL139, PL141, PL145, PL146, PL147, PL148, PL151, PL152, PL153, PL154, PL155, PL157, PL158, PL177, PL187, PL188, PL205, PL207, PL208
South Australia PEL 27, PPL 6, PPL 7, PPL 8, PPL 9, PPL 10, PPL 11, PPL 12, PPL 13, PPL 14, PPL 15, PPL 16, PPL 17, PPL 18, PPL 19, PPL 20, PPL 22, PPL 23, PPL 24, PPL 25, PPL 26, PPL 27, PPL 28, PPL 29, PPL 30, PPL 31, PPL 32, PPL 33, PPL 34, PPL 35, PPL 36, PPL 37, PPL 38, PPL 39, PPL 40, PPL 41, PPL 42, PPL 43, PPL 44, PPL 45, PPL 46, PPL 47, PPL 48, PPL 49, PPL 50, PPL 51, PPL 52, PPL 53, PPL 54, PPL 55, PPL 56, PPL 57, PPL 58, PPL 59, PPL 60, PPL 61, PPL 62, PPL 63, PPL 64, PPL 65, PPL 66, PPL 67, PPL 68, PPL 69, PPL 70, PPL 71, PPL 72, PPL 73, PPL 74, PPL 75, PPL 76, PPL 77, PPL 78, PPL 79, PPL 80, PPL 81, PPL 82, PPL 83, PPL 84, PPL 85, PPL 86, PPL 87, PPL 88, PPL 89, PPL 90, PPL 91, PPL 92, PPL 93, PPL 94, PPL 95, PPL 96, PPL 97, PPL 98, PPL 99, PPL 100, PPL 101, PPL 102, PPL 103, PPL 104, PPL 105, PPL 106, PPL 107, PPL 108, PPL 109, PPL 110, PPL 111, PPL 113, PPL 114, PPL 115, PPL 116, PPL 117, PPL 118, PPL 119, PPL 120, PPL 121, PPL 122, PPL 123, PPL 124, PPL 125, PPL 126, PPL 127, PPL 128, PPL 129, PPL 130, PPL 131, PPL 132, PPL 133, PPL 134, PPL 135, PPL 136, PPL 137, PPL 138, PPL 139, PPL 140, PPL 141, PPL 142, PPL 143, PPL 144, PPL 145, PPL 146, PPL 147, PPL 148, PPL 149, PPL 150, PPL 151, PPL 152, PPL 153, PPL 154, PPL 155, PPL 156, PPL 157, PPL 158, PPL 159, PPL 160, PPL 161, PPL 162, PPL 163, PPL 164, PPL 165, PPL 166, PPL 167, PPL 168, PPL 170, PPL 171, PPL 172, PPL 173, PPL 174, PPL 175, PPL 176, PPL 177, PPL 178, PPL 179, PPL 180, PPL 181, PPL 182, PPL 183, PPL 184, PPL 185, PPL 186, PPL 187, PPL 188, PPL 189, PPL 190, PPL 191, PPL 192, PPL 193, PPL 194, PPL 195, PPL 196, PPL 197, PPL 198, PPL 199, PPL 202
Tasmania T/18P, T/30P, T/34P, T/L1, T/L2, T/RL1
Victoria VIC/P43, VIC/P37(V), VIC/L23

Osaka Gas Australia Pty Ltd

Northern Territory NT/P48, NT/P55, NT/RL2

Otto Oil Pty Ltd

Western Australia EP 428, EP 436

Otway Oil and Gas Pty Ltd

South Australia EPP 34

Outback Oil and Gas Pty Ltd

Queensland ATP713P, ATP719P, ATP741P

Oz-Exoil NL

Northern Territory NT/P68

Pace Petroleum Pty Ltd

Western Australia EP 359, EP 433, EP 434, EP 435

Pacific Power

New South Wales PEL4

Pagehurst Pty Ltd

Queensland ATP567P

Pan Continental Oil and Gas NL

Western Australia WA-312-P, WA-340-P, EP 104, RL 1

Pan Pacific Petroleum (South Australia) Pty Ltd

Western Australia WA-246-P, TP/7, TL/2, WA-33-R, EP 110

Pan Pacific Petroleum NL

Western Australia WA-149-P, WA-254-P, L 9

PanCanadian Petroleum Ltd

Western Australia WA-22-L

Pangaea Oil and Gas Pty Ltd	
<i>New South Wales</i>	PEL437
<i>Queensland</i>	ATP610P, ATP620P, ATP648P, ATP777P, ATP788P
Peedamullah Petroleum Pty Ltd	
<i>Victoria</i>	VIC/P44
Pelsoil Ltd	
<i>Western Australia</i>	EP 104, RL 1
Pemian Oil Pty Ltd	
<i>South Australia</i>	PEL 86, PEL 87, PEL 89, PEL 104, PEL 111, PEL 115
Petromin Pty Ltd	
<i>Northern Territory</i>	L4, L5, RL2
Petrotech Pty Ltd	
<i>Victoria</i>	VIC/P40(V), PEP155, PEP156, PEP157, PEP158, PEP166
Petroz (Timor Sea) Pty Ltd	
<i>Joint Petroleum Development Area</i>	JPDA 03-12
Petroz NL	
<i>Western Australia</i>	WA-336-P
Phillips Australia Gas Holdings Pty Ltd	
<i>Western Australia</i>	WA-17-L
Phillips STL Pty Ltd	
<i>Northern Territory</i>	NT/P55
Queensland Gas Company Ltd	
<i>Queensland</i>	ATP610P, ATP620P, ATP621P, ATP632P, ATP648P, ATP651P, PL201
Radford, Roy Antony	
<i>Western Australia</i>	EP 110
Rawson Resources NL	
<i>Northern Territory</i>	EP97
<i>South Australia</i>	PEL 154, PEL 155
<i>Western Australia</i>	WA-331-P, TP/21, EP 423
Red Sky Exploration Pty Ltd	
<i>New South Wales</i>	PEL419, PEL420
Reef Oil Pty Ltd	
<i>South Australia</i>	PPL 6, PPL 7, PPL 8, PPL 9, PPL 10, PPL 11, PPL 12, PPL 13, PPL 14, PPL 15, PPL 16, PPL 17, PPL 18, PPL 19, PPL 20, PPL 22, PPL 23, PPL 24, PPL 25, PPL 27, PPL 28, PPL 29, PPL 30, PPL 31, PPL 32, PPL 33, PPL 34, PPL 35, PPL 36, PPL 37, PPL 38, PPL 39, PPL 40, PPL 41, PPL 42, PPL 43, PPL 44, PPL 45, PPL 46, PPL 47, PPL 48, PPL 49, PPL 50, PPL 51, PPL 52, PPL 53, PPL 54, PPL 55, PPL 56, PPL 57, PPL 58, PPL 59, PPL 60, PPL 61, PPL 63, PPL 64, PPL 65, PPL 66, PPL 67, PPL 68, PPL 69, PPL 70, PPL 71, PPL 72, PPL 73, PPL 74, PPL 75, PPL 78, PPL 79, PPL 80, PPL 81, PPL 82, PPL 83, PPL 84, PPL 85, PPL 86, PPL 87, PPL 88, PPL 89, PPL 90, PPL 91, PPL 92, PPL 93, PPL 94, PPL 95, PPL 96, PPL 97, PPL 98, PPL 99, PPL 100, PPL 101, PPL 102, PPL 103, PPL 104, PPL 105, PPL 106, PPL 107, PPL 108, PPL 109, PPL 110, PPL 111, PPL 113, PPL 114, PPL 115, PPL 116, PPL 117, PPL 119, PPL 120, PPL 121, PPL 122, PPL 123, PPL 124, PPL 125, PPL 126, PPL 127, PPL 128, PPL 129, PPL 130, PPL 132, PPL 133, PPL 134, PPL 135, PPL 137, PPL 138, PPL 139, PPL 140, PPL 141, PPL 143, PPL 144, PPL 145, PPL 146, PPL 148, PPL 149, PPL 150, PPL 151, PPL 153, PPL 154, PPL 155, PPL 157, PPL 159, PPL 160, PPL 161, PPL 162, PPL 163, PPL 164, PPL 165, PPL 166, PPL 169, PPL 170, PPL 171, PPL 172, PPL 173, PPL 174, PPL 175, PPL 176, PPL 177, PPL 178, PPL 179, PPL 180, PPL 181, PPL 183, PPL 184, PPL 185, PPL 186, PPL 188, PPL 189, PPL 190, PPL 192, PPL 193, PPL 195, PPL 196, PPL 198, PPL 199
Robert Thorpe	
<i>Victoria</i>	VIC/P60
ROC Oil WA Pty Ltd	
<i>Western Australia</i>	WA-226-P, WA-286-P, WA-325-P, WA-327-P, WA-349-P, TP/15, EP 413, L 14
Rocky Mountain Minerals Inc	
<i>Western Australia</i>	WA-329-P
Roma Petroleum Company Pty Ltd	
<i>Queensland</i>	ATP545P
Roma Petroleum NL	
<i>Queensland</i>	PL171
Rough Range Oil Pty Ltd	
<i>Western Australia</i>	WA-331-P, TP/21, EP 423, EP 359, EP 412, EP 433, EP 434, EP 435
Rudkowski, Bogdan	
<i>Queensland</i>	ATP723P
Sagasco South East Inc.	
<i>South Australia</i>	PPL 62, PPL 168, PPL 202
<i>Western Australia</i>	L 9
Samson-International (Australia) Pty Ltd	
<i>Queensland</i>	ATP645P, ATP684P
Santelle Pty Ltd	
<i>New South Wales</i>	PEL446
Santos (299) Pty Ltd	
<i>Queensland</i>	ATP299P

Santos (BOL) Pty Ltd	
<i>Queensland</i>	ATP212P, PL30, PL56, PL74, PL119, PL192
<i>South Australia</i>	PPL 6, PPL 7, PPL 8, PPL 9, PPL 10, PPL 11, PPL 12, PPL 13, PPL 14, PPL 15, PPL 16, PPL 17, PPL 18, PPL 19, PPL 20, PPL 22, PPL 23, PPL 24, PPL 25, PPL 27, PPL 28, PPL 29, PPL 30, PPL 31, PPL 32, PPL 33, PPL 34, PPL 35, PPL 36, PPL 37, PPL 38, PPL 39, PPL 40, PPL 41, PPL 42, PPL 43, PPL 44, PPL 45, PPL 46, PPL 47, PPL 48, PPL 49, PPL 50, PPL 51, PPL 52, PPL 53, PPL 54, PPL 55, PPL 56, PPL 57, PPL 58, PPL 59, PPL 60, PPL 61, PPL 63, PPL 64, PPL 65, PPL 66, PPL 67, PPL 68, PPL 69, PPL 70, PPL 71, PPL 72, PPL 73, PPL 74, PPL 75, PPL 78, PPL 79, PPL 80, PPL 81, PPL 82, PPL 83, PPL 84, PPL 85, PPL 86, PPL 87, PPL 88, PPL 89, PPL 90, PPL 91, PPL 92, PPL 93, PPL 94, PPL 95, PPL 96, PPL 97, PPL 98, PPL 99, PPL 100, PPL 101, PPL 102, PPL 103, PPL 104, PPL 105, PPL 106, PPL 107, PPL 108, PPL 109, PPL 110, PPL 111, PPL 113, PPL 114, PPL 115, PPL 116, PPL 117, PPL 119, PPL 120, PPL 121, PPL 122, PPL 123, PPL 124, PPL 125, PPL 126, PPL 127, PPL 128, PPL 129, PPL 130, PPL 132, PPL 133, PPL 134, PPL 135, PPL 137, PPL 138, PPL 139, PPL 140, PPL 141, PPL 143, PPL 144, PPL 145, PPL 146, PPL 148, PPL 149, PPL 150, PPL 151, PPL 153, PPL 154, PPL 155, PPL 157, PPL 159, PPL 160, PPL 161, PPL 162, PPL 163, PPL 164, PPL 165, PPL 166, PPL 170, PPL 171, PPL 172, PPL 173, PPL 174, PPL 175, PPL 176, PPL 177, PPL 178, PPL 179, PPL 180, PPL 181, PPL 183, PPL 184, PPL 185, PPL 186, PPL 188, PPL 189, PPL 190, PPL 192, PPL 193, PPL 195, PPL 196, PPL 198, PPL 199
<i>Victoria</i>	VIC/L22, VIC/RL7, PEP153, PEP154, PPL4, PPL5, PPL6, PPL7, PPL9, PPL10, PPL11, PPL12, PRL1
<i>Western Australia</i>	WA-149-P, WA-214-P, TP/7, WA-13-L, WA-29-L, TL/2, WA-33-R
Santos (Globe) NL	
<i>Western Australia</i>	WA-209-P
Santos (Globe) Pty Ltd	
<i>Western Australia</i>	WA-246-P, WA-15-L
Santos (JPDA 91-12) Pty Ltd	
<i>Joint Petroleum Development Area</i>	JPDA 03-12
Santos (NGA) Pty Ltd	
<i>Northern Territory</i>	NT/P48
Santos (ZOCA 91-01) Pty Ltd	
<i>Joint Petroleum Development Area</i>	JPDA 03-01
Santos Australian Hydrocarbons Pty Ltd	
<i>Queensland</i>	PL58, PL80, PL113, PL114, PL136, PL137, PL141, PL145, PL148, PL153, PL156, PL157, PL158, PL159, PL187, PL188
Santos Exploration Pty Ltd	
<i>Northern Territory</i>	L3, L4, L5, RL2
<i>Queensland</i>	PL192
Santos Gnuco Pty Ltd	
<i>Queensland</i>	ATP267P, PL33, PL50, PL51
Santos Ltd	
<i>Northern Territory</i>	NT/RL1, L3, RL2
<i>Queensland</i>	ATP259P, PL23, PL24, PL25, PL26, PL34, PL35, PL36, PL37, PL55, PL58, PL59, PL60, PL61, PL62, PL63, PL68, PL75, PL76, PL77, PL78, PL79, PL80, PL81, PL82, PL83, PL84, PL85, PL86, PL87, PL88, PL97, PL105, PL106, PL107, PL108, PL109, PL110, PL111, PL112, PL113, PL114, PL129, PL130, PL131, PL132, PL133, PL134, PL135, PL136, PL137, PL138, PL139, PL140, PL141, PL142, PL143, PL144, PL145, PL146, PL147, PL148, PL149, PL150, PL151, PL152, PL153, PL154, PL155, PL156, PL157, PL158, PL159, PL168, PL175, PL177, PL178, PL181, PL182, PL186, PL187, PL188, PL189, PL193, PL205, PL207, PL208
<i>South Australia</i>	PEL 114, PPL 6, PPL 7, PPL 8, PPL 9, PPL 10, PPL 11, PPL 12, PPL 13, PPL 14, PPL 15, PPL 16, PPL 17, PPL 18, PPL 19, PPL 20, PPL 22, PPL 23, PPL 24, PPL 25, PPL 26, PPL 27, PPL 28, PPL 29, PPL 30, PPL 31, PPL 32, PPL 33, PPL 34, PPL 35, PPL 36, PPL 37, PPL 38, PPL 39, PPL 40, PPL 41, PPL 42, PPL 43, PPL 44, PPL 45, PPL 46, PPL 47, PPL 48, PPL 49, PPL 50, PPL 51, PPL 52, PPL 53, PPL 54, PPL 55, PPL 56, PPL 57, PPL 58, PPL 59, PPL 60, PPL 61, PPL 63, PPL 64, PPL 65, PPL 66, PPL 67, PPL 68, PPL 69, PPL 70, PPL 71, PPL 72, PPL 73, PPL 74, PPL 75, PPL 76, PPL 77, PPL 78, PPL 79, PPL 80, PPL 81, PPL 82, PPL 83, PPL 84, PPL 85, PPL 86, PPL 87, PPL 88, PPL 89, PPL 90, PPL 91, PPL 92, PPL 93, PPL 94, PPL 95, PPL 96, PPL 97, PPL 98, PPL 99, PPL 100, PPL 101, PPL 102, PPL 103, PPL 104, PPL 105, PPL 106, PPL 107, PPL 108, PPL 109, PPL 110, PPL 111, PPL 113, PPL 114, PPL 115, PPL 116, PPL 117, PPL 118, PPL 119, PPL 120, PPL 121, PPL 122, PPL 123, PPL 124, PPL 125, PPL 126, PPL 127, PPL 128, PPL 129, PPL 130, PPL 131, PPL 132, PPL 133, PPL 134, PPL 135, PPL 136, PPL 137, PPL 138, PPL 139, PPL 140, PPL 141, PPL 142, PPL 143, PPL 144, PPL 145, PPL 146, PPL 147, PPL 148, PPL 149, PPL 150, PPL 151, PPL 152, PPL 153, PPL 154, PPL 155, PPL 156, PPL 157, PPL 158, PPL 159, PPL 160, PPL 161, PPL 162, PPL 163, PPL 164, PPL 165, PPL 166, PPL 167, PPL 169, PPL 170, PPL 171, PPL 172, PPL 173, PPL 174, PPL 175, PPL 176, PPL 177, PPL 178, PPL 179, PPL 180, PPL 181, PPL 182, PPL 183, PPL 184, PPL 185, PPL 186, PPL 187, PPL 188, PPL 189, PPL 190, PPL 191, PPL 192, PPL 193, PPL 194, PPL 195, PPL 196, PPL 197, PPL 198, PPL 199, PPL 206
<i>Tasmania</i>	T/RL1
<i>Victoria</i>	VIC/P44, VIC/P51, VIC/P52, VIC/RL3
<i>Western Australia</i>	WA-1-P, WA-18-P, WA-191-P, WA-274-P, WA-8-L, WA-20-L, WA-26-L, WA-27-L, WA-6-R, WA-27-R
Santos Offshore Pty Ltd	
<i>Northern Territory</i>	NT/P61, NT/P67, NT/RL1
<i>South Australia</i>	EPP 32
<i>Tasmania</i>	T/32P, T/33P, T/35P, T/36P
<i>Territory of Ashmore and Cartier Islands Adjacent Area</i>	AC/L1, AC/L2, AC/L3
<i>Victoria</i>	VIC/P55, VIC/RL2, VIC/RL1(V)
<i>Western Australia</i>	WA-18-P, WA-208-P, WA-209-P, WA-264-P, WA-281-P, WA-328-P, WA-338-P, WA-339-P, TP/2, WA-7-L, WA-15-L, TL/3, TL/4, TL/7, WA-27-R, TR/4, EP 61, EP 62, EP 357, L 1H, L 10, L 12, L 13

Santos Petroleum Pty Ltd	
<i>Queensland</i>	PL34, PL37, PL59, PL60, PL61, PL63, PL68, PL75, PL81, PL83, PL84, PL85, PL86, PL88, PL97, PL106, PL108, PL110, PL111, PL112, PL129, PL130, PL131, PL132, PL134, PL135, PL139, PL140, PL142, PL143, PL144, PL146, PL147, PL150, PL151, PL152, PL155, PL168, PL177, PL178, PL186, PL193, PL205, PL207, PL208
<i>South Australia</i>	PPL 6, PPL 7, PPL 8, PPL 9, PPL 10, PPL 11, PPL 12, PPL 13, PPL 14, PPL 15, PPL 16, PPL 17, PPL 18, PPL 19, PPL 20, PPL 22, PPL 23, PPL 24, PPL 25, PPL 27, PPL 28, PPL 29, PPL 30, PPL 31, PPL 32, PPL 33, PPL 34, PPL 35, PPL 36, PPL 37, PPL 38, PPL 39, PPL 40, PPL 41, PPL 42, PPL 43, PPL 44, PPL 45, PPL 46, PPL 47, PPL 48, PPL 49, PPL 50, PPL 51, PPL 52, PPL 53, PPL 54, PPL 55, PPL 56, PPL 57, PPL 58, PPL 59, PPL 60, PPL 61, PPL 63, PPL 64, PPL 65, PPL 66, PPL 67, PPL 68, PPL 69, PPL 70, PPL 71, PPL 72, PPL 73, PPL 74, PPL 75, PPL 78, PPL 79, PPL 80, PPL 81, PPL 82, PPL 83, PPL 84, PPL 85, PPL 86, PPL 87, PPL 88, PPL 89, PPL 90, PPL 91, PPL 92, PPL 93, PPL 94, PPL 95, PPL 96, PPL 97, PPL 98, PPL 99, PPL 100, PPL 101, PPL 102, PPL 103, PPL 104, PPL 105, PPL 106, PPL 107, PPL 108, PPL 109, PPL 110, PPL 111, PPL 113, PPL 114, PPL 115, PPL 116, PPL 117, PPL 119, PPL 120, PPL 121, PPL 122, PPL 123, PPL 124, PPL 125, PPL 126, PPL 127, PPL 128, PPL 129, PPL 130, PPL 132, PPL 133, PPL 134, PPL 135, PPL 137, PPL 138, PPL 139, PPL 140, PPL 141, PPL 143, PPL 144, PPL 145, PPL 146, PPL 148, PPL 149, PPL 150, PPL 151, PPL 153, PPL 154, PPL 155, PPL 157, PPL 159, PPL 160, PPL 161, PPL 162, PPL 163, PPL 164, PPL 165, PPL 166, PPL 169, PPL 170, PPL 171, PPL 172, PPL 173, PPL 174, PPL 175, PPL 176, PPL 177, PPL 178, PPL 179, PPL 180, PPL 181, PPL 183, PPL 184, PPL 185, PPL 186, PPL 188, PPL 189, PPL 190, PPL 192, PPL 193, PPL 195, PPL 196, PPL 198, PPL 199
Santos QNT Pty Ltd	
<i>Queensland</i>	ATP267P, ATP299P, ATP336P, ATP337P, ATP553P, ATP685P, PL1, PL2, PL17, PL21, PL22, PL27, PL28, PL29, PL33, PL38, PL39, PL41, PL42, PL43, PL44, PL45, PL50, PL51, PL52, PL54, PL57, PL64, PL67, PL69, PL71, PL89, PL95, PL169, PL170, PL173, PL176, PL183
SCGAU Pty Ltd	
<i>Western Australia</i>	EP 408
Sequill Pty Ltd	
<i>Queensland</i>	ATP574P, ATP589P, ATP593P, ATP608P
Shell Dev (PSC 19) P/L	
<i>Joint Petroleum Development Area</i>	JPDA 03-19
Shell Development (03-20) Pty Ltd	
<i>Joint Petroleum Development Area</i>	JPDA 03-20
Shell Development (Australia) Pty Ltd	
<i>Northern Territory</i>	NT/P48, NT/P55, NT/P57, NT/RL2
<i>Territory of Ashmore and Cartier Islands Adjacent Area</i>	AC/P8, AC/L5
<i>Western Australia</i>	WA-28-P, WA-205-P, WA-275-P, WA-294-P, WA-296-P, WA-297-P, WA-1-L, WA-2-L, WA-3-L, WA-4-L, WA-5-L, WA-6-L, WA-9-L, WA-11-L, WA-16-L, WA-23-L, WA-24-L, WA-2-R, WA-3-R, WA-4-R, WA-5-R, WA-7-R, WA-9-R, WA-10-R, WA-14-R, WA-16-R, WA-22-R, WA-23-R, WA-24-R, WA-25-R, WA-26-R, WA-28-R, WA-29-R, WA-30-R, WA-31-R, WA-32-R, TR/5, RL 2
Shogoil Australia Pty Ltd	
<i>Queensland</i>	ATP578P
Sita Oil Exploration House Inc	
<i>Victoria</i>	VIC/P59
SK Corporation	
<i>Western Australia</i>	WA-338-P, WA-34-R
Southern Amity Inc	
<i>Western Australia</i>	EP 381, EP 408
Springfield Oil & Gas Ltd	
<i>South Australia</i>	PEL 86, PEL 87, PEL 89, PEL 104, PEL 111, PEL 115
Starzap Pty Ltd	
<i>Queensland</i>	ATP647P
Strata Resources NL	
<i>Western Australia</i>	WA-321-P, WA-323-P, WA-329-P, WA-330-P
Strike Oil Limited	
<i>Western Australia</i>	WA-340-P, EP 420, EP 421
Strike Oil NL	
<i>Western Australia</i>	WA-261-P, WA-312-P, TP/17, TP/18, TP/19, EP 341, EP 342, EP 424
Stuart Petroleum Ltd	
<i>South Australia</i>	PEL 90, PEL 93, PEL 102, PEL 113, PPL 203, PPL 207, PPL 208
Sun Resources NL	
<i>New South Wales</i>	PEL444
<i>Western Australia</i>	WA-254-P, WA-257-P, WA-261-P, WA-312-P, WA-340-P, EP 325, EP 359
Sunshine 685 Pty Ltd	
<i>Queensland</i>	ATP685P
Sweetpea Corporation Pty Ltd	
<i>Northern Territory</i>	EP76, EP98, EP99
Sydney Gas (Camden) Operations Pty Ltd	
<i>New South Wales</i>	PPL1(NSW), PPL2(NSW), PPL4(NSW)
Sydney Gas Operations Pty Ltd	
<i>New South Wales</i>	PEL2, PEL4, PEL5, PEL267, PEL441
Sykes Ian Grant	
<i>Queensland</i>	PL72, PL73
Tacnas Pty Ltd	
<i>South Australia</i>	PEL 86, PEL 87, PEL 89, PEL 104, PEL 111, PEL 115
Tap (Harriet) Pty Ltd	
<i>Western Australia</i>	WA-192-P, WA-246-P, WA-334-P, TP/8, EP 363, TL/1, TL/5, TL/6, TL/8, TL/9, TR/1, TR/2, EP 307, EP 358

Tap (Shelfal) Pty Ltd	
<i>Western Australia</i>	WA-149-P, WA-291-P, TP/20, EP 341, EP 364, EP 395, EP 397, EP 403, WA-8-L, WA-33-R, EP 137
Tap Oil Limited	
<i>Western Australia</i>	TP/18, EP 420, WA-34-R
Tap West Pty Ltd	
<i>Western Australia</i>	WA-22-L, WA-25-L
Terratek Drilling Tools Pty Ltd	
<i>Western Australia</i>	EP 129, L 6, L 8
Texaco Australia Pty Ltd	
<i>Western Australia</i>	WA-205-P, WA-253-P, WA-268-P, TP/2, WA-7-L, TL/3, TL/4, TL/7, WA-2-R, WA-3-R, WA-4-R, WA-5-R, WA-14-R, WA-16-R, WA-17-R, WA-18-R, WA-19-R, WA-20-R, WA-21-R, WA-22-R, WA-23-R, WA-24-R, WA-25-R, WA-26-R, TR/4, EP 61, EP 62, EP 357, L 1H, L 10, L 12, L 13
Texaco Barcoo Pty Ltd	
<i>Western Australia</i>	WA-303-P, WA-305-P
Texaco Copernicus Pty Ltd	
<i>Western Australia</i>	WA-302-P
Timor Oil Ltd	
<i>Queensland</i>	PL17
Tipperary Oil & Gas (Australia) Pty Ltd	
<i>Queensland</i>	ATP655P
TMOC Exploration Pty Ltd	
<i>Victoria</i>	PEP160
Todd Petroleum Mining Company Ltd	
<i>Territory of Ashmore and Cartier Islands Adjacent Area</i>	AC/P20
Tokyo Timor Sea Resources Pty Ltd	
<i>Joint Petroleum Development Area</i>	JPDA 03-13
Traditional Oil Exploration NL	
<i>South Australia</i>	PEL 88, PEL 100
Transoil Pty Ltd	
<i>Northern Territory</i>	LA, L5, RL2
TransOrient Petroleum (Australia) Pty Ltd	
<i>Territory of Ashmore and Cartier Islands Adjacent Area</i>	AC/P26
Tri-C Resources Inc.	
<i>South Australia</i>	PEL 105
Trinity Gas Resources Pty Ltd	
<i>Victoria</i>	VIC/L21, VIC/RL3
Triple J Resources Pty Ltd	
<i>Queensland</i>	ATP594P
Tri-Star Petroleum Company	
<i>Queensland</i>	ATP526P, ATP584P, ATP653P, ATP664P, ATP665P, ATP703P, ATP706P, ATP707P, ATP708P, ATP735P, ATP745P, PL90, PL91, PL92, PL99, PL100
TSP Arafura Petroleum Pty Ltd	
<i>Northern Territory</i>	NT/P68
Tubridgi Petroleum Pty Ltd	
<i>Western Australia</i>	L 9
TXU Gas Storage Pty Ltd	
<i>Victoria</i>	PPL1, PPL2
United Oil and Gas Pty Ltd	
<i>South Australia</i>	EPP 34
Unocal South Asean Ltd	
<i>Tasmania</i>	T/32P
<i>Victoria</i>	VIC/P52
Unocal South Australia Ltd	
<i>Tasmania</i>	T/35P, T/36P

Vamgas Pty Ltd*Queensland*

ATP552P, PL23, PL24, PL25, PL26, PL29, PL34, PL35, PL36, PL37, PL38, PL39, PL52, PL55, PL57, PL58, PL59, PL60, PL61, PL62, PL63, PL68, PL75, PL76, PL77, PL78, PL79, PL80, PL81, PL82, PL83, PL84, PL85, PL86, PL87, PL88, PL95, PL97, PL105, PL106, PL107, PL108, PL109, PL110, PL111, PL112, PL113, PL114, PL129, PL130, PL131, PL132, PL133, PL134, PL135, PL136, PL137, PL138, PL139, PL140, PL141, PL142, PL143, PL144, PL145, PL146, PL147, PL148, PL149, PL150, PL151, PL152, PL153, PL154, PL155, PL156, PL157, PL158, PL159, PL168, PL169, PL170, PL175, PL176, PL177, PL178, PL181, PL182, PL186, PL187, PL188, PL189, PL193, PL205, PL207, PL208

South Australia

PPL 6, PPL 7, PPL 8, PPL 9, PPL 10, PPL 11, PPL 12, PPL 13, PPL 14, PPL 15, PPL 16, PPL 17, PPL 18, PPL 19, PPL 20, PPL 22, PPL 23, PPL 24, PPL 25, PPL 26, PPL 27, PPL 28, PPL 29, PPL 30, PPL 31, PPL 32, PPL 33, PPL 34, PPL 35, PPL 36, PPL 37, PPL 38, PPL 39, PPL 40, PPL 41, PPL 42, PPL 43, PPL 44, PPL 45, PPL 46, PPL 47, PPL 48, PPL 49, PPL 50, PPL 51, PPL 52, PPL 53, PPL 54, PPL 55, PPL 56, PPL 57, PPL 58, PPL 59, PPL 60, PPL 61, PPL 63, PPL 64, PPL 65, PPL 66, PPL 67, PPL 68, PPL 69, PPL 70, PPL 71, PPL 72, PPL 73, PPL 74, PPL 75, PPL 76, PPL 77, PPL 78, PPL 79, PPL 80, PPL 81, PPL 82, PPL 83, PPL 84, PPL 85, PPL 86, PPL 87, PPL 88, PPL 89, PPL 90, PPL 91, PPL 92, PPL 93, PPL 94, PPL 95, PPL 96, PPL 97, PPL 98, PPL 99, PPL 100, PPL 101, PPL 102, PPL 103, PPL 104, PPL 105, PPL 106, PPL 107, PPL 108, PPL 109, PPL 110, PPL 111, PPL 113, PPL 114, PPL 115, PPL 116, PPL 117, PPL 118, PPL 119, PPL 120, PPL 121, PPL 122, PPL 123, PPL 124, PPL 125, PPL 126, PPL 127, PPL 128, PPL 129, PPL 130, PPL 131, PPL 132, PPL 133, PPL 134, PPL 135, PPL 136, PPL 137, PPL 138, PPL 139, PPL 140, PPL 141, PPL 142, PPL 143, PPL 144, PPL 145, PPL 146, PPL 147, PPL 148, PPL 149, PPL 150, PPL 151, PPL 152, PPL 153, PPL 154, PPL 155, PPL 156, PPL 157, PPL 158, PPL 159, PPL 160, PPL 161, PPL 162, PPL 163, PPL 164, PPL 165, PPL 166, PPL 167, PPL 169, PPL 170, PPL 171, PPL 172, PPL 173, PPL 174, PPL 175, PPL 176, PPL 177, PPL 178, PPL 179, PPL 180, PPL 181, PPL 182, PPL 183, PPL 184, PPL 185, PPL 186, PPL 187, PPL 188, PPL 189, PPL 190, PPL 191, PPL 192, PPL 193, PPL 194, PPL 195, PPL 196, PPL 197, PPL 198, PPL 199

Vernon E Faulconer Australia Inc*Queensland*

ATP543P, PL117

South Australia

PEL 101, PEL 103

Victoria Diamond Exploration Pty Ltd*Western Australia*

EP 406, EP 427

Victoria International Petroleum NL*Queensland*

ATP333P

Victoria Oil Exploration (1977) Pty Ltd*Queensland*

ATP589P

South Australia

PEL 86, PEL 87, PEL 88, PEL 89, PEL 104, PEL 111, PEL 115

Victoria Oil Pty Ltd*Queensland*

ATP333P, ATP771P

Victoria Petroleum (Middle East) Pty Ltd*Western Australia*

TP/21, EP 423

Victoria Petroleum (WA-209-P) Pty Ltd*Western Australia*

WA-312-P, WA-340-P

Victoria Petroleum NL*Queensland*

ATP574P, ATP608P, PL171

South Australia

PEL 57

Western Australia

WA-254-P, WA-261-P, EP 325

Victoria Petroleum Offshore Pty Ltd*Western Australia*

EP 413, L 14

Voyager (PB) Ltd*Western Australia*

WA-226-P, WA-286-P, WA-325-P, WA-327-P, WA-349-P, TP/15, EP 104, EP 368, EP 413, L 14, RL 1

Wandoo Petroleum Pty Ltd*Tasmania*

T/18P, T/L1

Western Australia

WA-202-P, WA-226-P, WA-256-P, WA-286-P, WA-325-P, WA-327-P, WA-14-L

West Oil NL*Territory of Ashmore and*

AC/P26, AC/P32

*Cartier Islands Adjacent**Area*

Westranch Holdings Pty Ltd*Territory of Ashmore and*

AC/P22, AC/P32

*Cartier Islands Adjacent**Area**Western Australia*

TP/15, EP 364, EP 437

Woodside Eastern Energy Pty Ltd*Victoria*

VIC/RL2

Woodside Energy Ltd*Northern Territory*

NT/P55, NT/P57, NT/RL2

South Australia

EPP 28, EPP 29, EPP 30, EPP 31

Tasmania

T/30P, T/34P, T/L2

Territory of Ashmore and

AC/P8, AC/P17, AC/L5

*Cartier Islands Adjacent**Area**Victoria*

VIC/P43, VIC/P37(V), VIC/L23

Western Australia

WA-1-P, WA-28-P, WA-191-P, WA-208-P, WA-248-P, WA-254-P, WA-255-P, WA-269-P, WA-271-P, WA-275-P, WA-279-P, WA-293-P, WA-294-P, WA-296-P, WA-297-P, WA-313-P, WA-347-P, WA-348-P, WA-350-P, WA-353-P, WA-1-L, WA-2-L, WA-3-L, WA-4-L, WA-5-L, WA-6-L, WA-9-L, WA-11-L, WA-16-L, WA-20-L, WA-23-L, WA-24-L, WA-26-L, WA-27-L, WA-28-L, WA-7-R, WA-9-R, WA-10-R, WA-28-R, WA-29-R, WA-30-R, WA-31-R, WA-32-R, TR/5, RL 2

Woodside Oil Ltd*Territory of Ashmore and*

AC/P4

*Cartier Islands Adjacent**Area*

Woodside Petroleum (Timor Sea 1) Pty Ltd*Joint Petroleum Development*

JPDA 03-01

Area

Woodside Petroleum (Timor Sea 19) Pty Ltd*Joint Petroleum Development**Area*

Woodside Petroleum (Timor Sea 20) Pty Ltd*Joint Petroleum Development**Area*

ZOCA 96-16 Pty Ltd*Joint Petroleum Development**Area*

ZOCA Pty Ltd*Joint Petroleum Development**Area*

KEY TO PETROLEUM EXPLORATION AND DEVELOPMENT TITLES

Title	Company (Operator*)	Equity	Expiry Date
Queensland			
Onshore			
Exploration Permit			
		Sq km approximate	
ATP212P	Bowen/Surat Basin	Blocks: 5 Sq km: 371	31/07/2005
Angari Pty Ltd*		49.00	
Bridge Oil Exploration Pty Ltd		7.50	
Mosaic Oil NL		10.00	
Mosaic Oil QLD Pty Ltd		6.00	
Origin Energy CSG Ltd		20.00	
Santos (BOL) Pty Ltd		7.50	
ATP259P	Cooper/Eromanga Basin	Blocks: 378 Sq km: 28,106	31/12/2006
Delhi Petroleum Pty Ltd		50.00	
Santos Ltd*		50.00	
ATP267P	Cooper/Eromanga Basin	Blocks: 12 Sq km: 740	30/11/2007
Magellan Petroleum (Eastern) Pty Ltd		40.93	
Santos Gnuco Pty Ltd		7.77	
Santos QNT Pty Ltd*		51.30	
ATP269P R1	Cooper/Eromanga Basin	Blocks: 18 Sq km: 2,404	31/12/2007
Beach Petroleum Ltd*		80.00	
Inland Oil (Production) Pty Ltd		6.10	
Mawson Petroleum Pty Ltd		13.90	
ATP299P	Cooper/Eromanga Basin	Blocks: 24 Sq km: 1,858	
CPC Energy Pty Ltd		1.00	
Drillsearch Energy NL		10.00	
Santos (299) Pty Ltd		12.00	
Santos QNT Pty Ltd*		77.00	
ATP333P	Bowen/Surat Basin	Blocks: 5 Sq km: 415	31/05/2005
Victoria International Petroleum NL*		64.00	
Victoria Oil Pty Ltd		36.00	
ATP336P R1	Bowen/Surat Basin	Blocks: 28 Sq km: 2,318	30/09/2007
Interstate Pipelines Pty Ltd		15.00	
Santos QNT Pty Ltd*		85.00	
ATP337P	Bowen/Surat Basin	Blocks: 100 Sq km: 7,744	
Origin Energy CSG Ltd		50.00	
Santos QNT Pty Ltd*		50.00	
ATP364P	Bowen Basin	Blocks: 92 Sq km: 8,467	28/02/2006
BHP Coal Pty Ltd*		99.00	
CH4 Pty Ltd		1.00	
ATP375P	Bowen/Surat Basin	Blocks: 3 Sq km: 249	30/09/2006
Origin Energy CSG Ltd*		100.00	
ATP470P	Bowen/Surat Basin	Blocks: 12 Sq km: 892	28/02/2007
Origin Energy CSG Ltd*		100.00	
ATP471P	Bowen/Surat Basin	Blocks: 22 Sq km: 1,633	28/02/2007
Mosaic Oil QLD Pty Ltd*		100.00	
ATP526P R1	Bowen/Surat Basin	Blocks: 37 Sq km: 3,177	31/10/2008
Tri-Star Petroleum Company*		100.00	
ATP529P R1	Eromanga/Galilee Basin	Blocks: 181 Sq km: 15,025	30/11/2008
Beaconsfield Energy Development Pty Ltd		50.00	
Capricorn Energy Pty Ltd*		50.00	
ATP539P	Eromanga Basin	Blocks: 77 Sq km: 6,392	
Great Artesian Oil and Gas Ltd*		100.00	
ATP543P	Cooper/Eromanga Basin	Blocks: 52 Sq km: 5,562	
Vernon E Faulconer Australia Inc*		100.00	
ATP545P	Cooper/Eromanga Basin	Blocks: 25 Sq km: 4,151	
Roma Petroleum Company Pty Ltd*		100.00	
ATP548P	Cooper/Eromanga Basin	Blocks: 35 Sq km: 2,906	
Cantel Petroleum Pty Ltd		9.50	
IOR Exploration Pty Ltd*		60.50	
Netscald Pty Ltd		20.00	
Oilex NL		10.00	
ATP549P	Cooper/Eromanga Basin	Blocks: 99 Sq km: 9,464	30/04/2005
Australian Gasfields Ltd*		100.00	
ATP552P R1	Bowen/Surat Basin	Blocks: 6 Sq km: 515	30/06/2005
Bligh Oil and Minerals NL		44.40	
Great Artesian Oil and Gas Ltd*		25.45	
Hyland Bay Pty Ltd		2.12	
Maple Oil NL		6.06	
Vamgas Pty Ltd		21.97	
ATP553P	Bowen/Surat Basin	Blocks: 14 Sq km: 1,162	30/11/2005
Origin Energy CSG Ltd		50.00	
Santos QNT Pty Ltd*		50.00	

Title	Company (Operator*)	Equity	Expiry Date
ATP556P	Eromanga Basin	Blocks: 41 Sq km: 3,404	
Maneroo Oil Company Ltd*		100.00	
ATP560P	Cooper/Eromanga Basin	Blocks: 23 Sq km: 2,633	30/11/2005
Oil Wells of Kentucky Inc*		100.00	
ATP564P	Bowen/Surat Basin	Blocks: 44 Sq km: 3,778	30/04/2006
Helm Energy Australia LLC		25.00	
Lowell Petroleum NL		25.00	
Oil Company of Australia (Moura) Pty Ltd*		50.00	
ATP566P	Eromanga Basin	Blocks: 7 Sq km: 542	
Maneroo Oil Company Ltd*		100.00	
ATP567P	Eromanga Basin	Blocks: 154 Sq km: 17,888	30/04/2006
Pagehurst Pty Ltd*		100.00	
ATP574P	Bowen/Surat Basin	Blocks: 4 Sq km: 429	30/04/2006
Australian Coalbed Methane Pty Ltd		6.25	
Sequoil Pty Ltd		18.75	
Victoria Petroleum NL*		75.00	
ATP578P	Eromanga Basin	Blocks: 65 Sq km: 5,033	
Shogoli Australia Pty Ltd*		100.00	
ATP582P	Eromanga Basin	Blocks: 365 Sq km: 28,264	
Cooper-Eromanga Oil Inc*		100.00	
ATP584P	Bowen/Surat Basin	Blocks: 12 Sq km: 915	31/07/2006
Tri-Star Petroleum Company*		100.00	
ATP587P	Eromanga Basin	Blocks: 12 Sq km: 996	
Adenmere Pty Ltd		50.00	
Millennium Resources Qld Pty Ltd*		50.00	
ATP589P	Cooper/Eromanga Basin	Blocks: 197 Sq km: 14,945	
Sequoil Pty Ltd		40.00	
Victoria Oil Exploration (1977) Pty Ltd*		60.00	
ATP592P	Bowen/Surat Basin	Blocks: 33 Sq km: 3,520	31/08/2006
Origin Energy CSG Ltd*		100.00	
ATP593P	Bowen/Surat Basin	Blocks: 15 Sq km: 2,232	30/09/2006
Azeeza Pty Ltd*		60.00	
Sequoil Pty Ltd		40.00	
ATP594P	Cooper/Eromanga Basin	Blocks: 20 Sq km: 1,549	
Icon Energy Ltd*		50.00	
Triple J Resources Pty Ltd		50.00	
ATP602P	Bowen/Surat Basin	Blocks: 8 Sq km: 1,030	31/12/2006
Helm Energy Australia LLC*		25.00	
Lowell Petroleum NL		25.00	
Oil Company of Australia (Moura) Pty Ltd		50.00	
ATP606P	Bowen/Surat Basin	Blocks: 38 Sq km: 3,263	31/10/2006
Origin Energy CSG Ltd*		100.00	
ATP608P	Bowen/Surat Basin	Blocks: 53 Sq km: 4,551	30/11/2006
Sequoil Pty Ltd		40.00	
Victoria Petroleum NL*		60.00	
ATP610P	Bowen/Surat Basin	Blocks: 3 Sq km: 387	
Pangaea Oil and Gas Pty Ltd*		29.38	
Queensland Gas Company Ltd		70.62	
ATP613P	Maryborough Basin	Blocks: 15 Sq km: 1,546	31/03/2007
Magellan Petroleum (Eastern) Pty Ltd*		100.00	
ATP616P	Cooper/Eromanga Basin	Blocks: 8 Sq km: 619	
Liberty Petroleum Corporation*		100.00	
ATP618P	Eromanga Basin	Blocks: 151 Sq km: 11,693	
Harlow Australia Pty Ltd*		100.00	
ATP619P R1	Eromanga Basin	Blocks: 34 Sq km: 2,633	28/02/2006
Bonnerwell Pty Ltd		30.00	
Lockshire Pty Ltd		5.00	
Mitchell Gas Pty Ltd*		65.00	
ATP620P R1	Surat Basin	Blocks: 6 Sq km: 515	28/02/2008
Pangaea Oil and Gas Pty Ltd*		40.62	
Queensland Gas Company Ltd		59.38	
ATP621P	Bowen/Surat Basin	Blocks: 7 Sq km: 601	
Bobwyns Pty Ltd*		95.00	
Queensland Gas Company Ltd		5.00	
ATP626P	Bowen/Surat Basin	Blocks: 30 Sq km: 2,323	
Jakabar Pty Ltd*		100.00	
ATP631P	Bowen/Surat Basin	Blocks: 21 Sq km: 2,092	31/08/2005
Origin Energy CSG Ltd*		100.00	

KEY TO PETROLEUM EXPLORATION AND DEVELOPMENT TITLES

Title				
<i>Accumulation</i>				
Company (Operator*)		Equity		Expiry Date
ATP632P	Bowen/Surat Basin	Blocks: 53	Sq km: 3,719	
Queensland Gas Company Ltd*			100.00	
ATP641P	Clarence/Moreton Basin	Blocks: 122	Sq km: 9,447	31/03/2006
BNG Pty Ltd*			100.00	
ATP644P R1	Clarence/Moreton Basin	Blocks: 26	Sq km: 3,177	31/10/2007
BNG Pty Ltd*			100.00	
ATP645P R1	Bowen/Surat Basin	Blocks: 24	Sq km: 2,400	31/12/2007
BNG (Surat) Pty Ltd*			50.00	
Samson-International (Australia) Pty Ltd			50.00	
ATP647P	Bowen/Surat Basin	Blocks: 11	Sq km: 945	31/07/2005
Starzap Pty Ltd*			100.00	
ATP648P	Bowen/Surat Basin	Blocks: 18	Sq km: 2,710	
Pangaea Oil and Gas Pty Ltd			31.25	
Queensland Gas Company Ltd*			68.75	
ATP651P	Bowen/Surat Basin	Blocks: 19	Sq km: 1,936	
Queensland Gas Company Ltd*			100.00	
ATP653P	Bowen/Surat Basin	Blocks: 5	Sq km: 388	30/09/2006
Tri-Star Petroleum Company*			100.00	
ATP655P	Bowen/Surat Basin	Blocks: 4	Sq km: 310	31/10/2007
Tipperary Oil & Gas (Australia) Pty Ltd*			100.00	
ATP663P	Surat Basin	Blocks: 33		30/09/2006
Origin Energy CSG Ltd*			100.00	
ATP664P	Surat Basin	Blocks: 17		31/08/2007
Tri-Star Petroleum Company*			100.00	
ATP665P	Bowen/Surat Basin	Blocks: 18		31/10/2007
Tri-Star Petroleum Company*			100.00	
ATP676P R1	Bowen/Surat Basin	Blocks: 69	Sq km: 5,343	30/09/2008
Australian Coalbed Methane Pty Ltd*			100.00	
ATP679P	Clarence/Moreton Basin	Blocks: 11	Sq km: 852	
Arrow Energy NL*			100.00	
ATP682P R1	Bowen/Surat Basin	Blocks: 1	Sq km: 77	28/02/2006
Ausam Resources NL			25.00	
Kingston Petroleum Pty Ltd			20.00	
Origin Energy Resources Ltd*			55.00	
ATP683P R1	Clarence/Moreton Basin	Blocks: 77	Sq km: 8,307	29/02/2008
Arrow Energy NL*			100.00	
ATP684P	Bowen Basin	Blocks: 35	Sq km: 2,689	31/07/2005
BNG (Surat) Pty Ltd*			40.00	
Samson-International (Australia) Pty Ltd			60.00	
ATP685P R1	Bowen/Surat Basin	Blocks: 12	Sq km: 1,162	30/04/2008
Santos QNT Pty Ltd*			50.00	
Sunshine 685 Pty Ltd			50.00	
ATP688P	Bowen Basin	Blocks: 100	Sq km: 8,048	28/02/2007
BNG (Surat) Pty Ltd*			50.00	
Hamilbent Pty Ltd			50.00	
ATP689P	Bowen/Surat Basin	Blocks: 59	Sq km: 4,374	
Australian Coalbed Methane Pty Ltd*			100.00	
ATP692P	Bowen/Surat Basin	Blocks: 15	Sq km: 1,549	
Origin Energy CSG Ltd*			100.00	
ATP693P	Bowen Basin	Blocks: 38	Sq km: 2,925	30/11/2005
BNG (Surat) Pty Ltd*			100.00	
ATP698P	Bowen/Surat Basin	Blocks: 6	Sq km: 464	30/09/2006
Origin Energy CSG Ltd*			100.00	
ATP700P	New England Fold Belt Basin	Blocks: 29	Sq km: 2,294	31/03/2007
Arrow Energy NL*			100.00	
ATP702P	Bowen/Surat Basin	Blocks: 9	Sq km: 688	28/02/2007
Origin Energy CSG Ltd*			100.00	
ATP703P	Bowen/Surat Basin	Blocks: 15	Sq km: 1,132	30/09/2006
Tri-Star Petroleum Company*			100.00	
ATP706P	Surat Basin	Blocks: 11	Sq km: 832	5/10/2007
Tri-Star Petroleum Company*			100.00	
ATP707P	Surat Basin	Blocks: 22	Sq km: 1,669	6/10/2007
Tri-Star Petroleum Company*			100.00	
ATP708P	Bowen/Surat Basin	Blocks: 12	Sq km: 921	30/09/2007
Tri-Star Petroleum Company*			100.00	
ATP709P	Bowen/Surat Basin	Blocks: 8	Sq km: 859	31/08/2005
Mosaic Oil QLD Pty Ltd*			100.00	

Title				
<i>Accumulation</i>				
Company (Operator*)		Equity		Expiry Date
ATP713P	Surat Basin	Blocks: 20	Sq km: 1,530	31/12/2007
Outback Oil and Gas Pty Ltd*			100.00	
ATP716P	New England Fold Belt Basin	Blocks: 95	Sq km: 7,395	31/10/2007
Arrow Energy NL*			100.00	
ATP719P	Eromanga Basin	Blocks: 11	Sq km: 828	31/12/2007
Outback Oil and Gas Pty Ltd*			100.00	
ATP722P	Bowen Basin	Blocks: 18	Sq km: 1,391	20/11/2006
BNG (Surat) Pty Ltd*			100.00	
ATP723P	Bowen/Surat Basin	Blocks: 9	Sq km: 680	11/05/2007
Kreznel, Jan			50.00	
Rudkowski, Bogdan*			50.00	
ATP727P	Bowen Basin	Blocks: 3	Sq km: 238	3/05/2008
CH4 Pty Ltd*			100.00	
ATP728P	Bowen/Surat Basin	Blocks: 6	Sq km: 463	7/08/2006
Global Petroleum Limited*			100.00	
ATP735P	Bowen Basin	Blocks: 19	Sq km: 1,481	27/08/2007
Tri-Star Petroleum Company*			100.00	
ATP741P	Eromanga Basin	Blocks: 10	Sq km: 785	31/12/2007
Outback Oil and Gas Pty Ltd*			100.00	
ATP745P	Bowen Basin	Blocks: 8	Sq km: 623	12/10/2007
Tri-Star Petroleum Company*			100.00	
ATP748P	Bowen Basin	Blocks: 5	Sq km: 392	3/05/2008
CH4 Pty Ltd*			100.00	
ATP751P	Bowen Basin	Blocks: 5	Sq km: 392	30/04/2008
CH4 Pty Ltd*			100.00	
ATP753P	Bowen Basin	Blocks: 3	Sq km: 235	3/05/2008
CH4 Pty Ltd*			100.00	
ATP754P	Bowen/Surat Basin	Blocks: 80	Sq km: 6,225	3/08/2007
Ausam Resources NL*			50.00	
Origin Energy Resources Ltd			50.00	
ATP755P	Surat Basin	Blocks: 5	Sq km: 373	30/11/2008
Brisbane Petroleum NL			50.00	
Longreach Oil Ltd*			50.00	
ATP758P	Bowen Basin	Blocks: 89	Sq km: 7,002	18/10/2008
OME Resources Australia Pty Ltd*			100.00	
ATP759P	Bowen Basin	Blocks: 78	Sq km: 6,183	31/10/2008
OME Resources Australia Pty Ltd*			100.00	
ATP767P	Surat Basin	Blocks: 2	Sq km: 148	30/06/2008
BNG (Surat) Pty Ltd*			100.00	
ATP768P	Surat Basin	Blocks: 2	Sq km: 155	30/09/2008
BNG (Surat) Pty Ltd*			100.00	
ATP771P	Surat Basin	Blocks: 13	Sq km: 1,000	7/07/2008
Victoria Oil Pty Ltd*			100.00	
ATP777P	Bowen/Surat Basin	Blocks: 6	Sq km: 436	31/10/2008
Pangaea Oil and Gas Pty Ltd*			100.00	
ATP788P	Surat Basin	Blocks: 9	Sq km: 724	31/12/2008
Pangaea Oil and Gas Pty Ltd*			100.00	
ATP790P	Bowen Basin	Blocks: 3	Sq km: 234	31/10/2008
Arrow Energy NL*			100.00	
ATP791P	Clarence/Moreton Basin	Blocks: 98	Sq km: 7,055	31/12/2008
BNG Pty Ltd*			100.00	
ATP793P	Bowen Basin	Blocks: 4	Sq km: 317	13/09/2008
Diamond Creek Coal Pty Ltd*			100.00	
ATP805P	Surat Basin	Blocks: 13	Sq km: 1,006	31/01/2009
Bow Energy Ltd*			100.00	
ATP807P	Surat Basin	Blocks: 18	Sq km: 1,362	31/12/2008
Bow Energy Ltd*			100.00	
ATP812P	Clarence/Moreton Basin	Blocks: 3	Sq km: 228	31/12/2008
New Acland Coal Pty Ltd*			100.00	
Production Licence			Sq km approximate	
PL1	Bowen/Surat Basin	Blocks: -	Sq km: 258	31/12/2006
<i>Cabawin, Moonie</i>				
Santos QNT Pty Ltd*			100.00	
PL2	Bowen/Surat Basin	Blocks: -	Sq km: 258	31/12/2008
<i>Alton</i>				
Santos QNT Pty Ltd*			100.00	

KEY TO PETROLEUM EXPLORATION AND DEVELOPMENT TITLES

Title				
<i>Accumulation</i>				
Company (Operator*)	Equity	Expiry Date		
PL3 Bowen/Surat Basin	Blocks: - Sq km: 257	28/02/2011		
<i>Timbury Hills</i>				
Associated Petroleum Pty Ltd*	85.00			
Interstate Pipelines Pty Ltd	15.00			
PL4 Bowen/Surat Basin	Blocks: - Sq km: 257	28/02/2011		
<i>Pine Ridge</i>				
Associated Petroleum Pty Ltd*	85.00			
Interstate Pipelines Pty Ltd	15.00			
PL5 Bowen/Surat Basin	Blocks: - Sq km: 257	28/02/2011		
<i>Raslie, Yanalah</i>				
Associated Petroleum Pty Ltd*	85.00			
Interstate Pipelines Pty Ltd	15.00			
PL6 Bowen/Surat Basin	Blocks: - Sq km: 257	28/02/2011		
<i>Pringle Downs, Roma</i>				
Associated Petroleum Pty Ltd*	85.00			
Interstate Pipelines Pty Ltd	15.00			
PL7 Bowen/Surat Basin	Blocks: - Sq km: 257	28/02/2011		
<i>Blyth Creek, Richmond</i>				
Associated Petroleum Pty Ltd*	85.00			
Interstate Pipelines Pty Ltd	15.00			
PL8 Bowen/Surat Basin	Blocks: - Sq km: 257	28/02/2011		
<i>Wallumbilla South</i>				
Associated Petroleum Pty Ltd*	85.00			
Interstate Pipelines Pty Ltd	15.00			
PL9 Bowen/Surat Basin	Blocks: - Sq km: 257	28/02/2011		
<i>Anabranah, Maffra</i>				
Associated Petroleum Pty Ltd*	85.00			
Interstate Pipelines Pty Ltd	15.00			
PL10 Bowen/Surat Basin	Blocks: - Sq km: 257	28/02/2011		
<i>Bony Creek, Tarrawonga</i>				
Associated Petroleum Pty Ltd*	85.00			
Interstate Pipelines Pty Ltd	15.00			
PL11 Bowen/Surat Basin	Blocks: - Sq km: 257	28/02/2011		
<i>Back Creek, Tarrawonga</i>				
Associated Petroleum Pty Ltd*	85.00			
Interstate Pipelines Pty Ltd	15.00			
PL12 Bowen/Surat Basin	Blocks: - Sq km: 257	28/02/2011		
<i>Oberina, Trinidad</i>				
Associated Petroleum Pty Ltd*	85.00			
Interstate Pipelines Pty Ltd	15.00			
PL13 Bowen/Surat Basin	Blocks: - Sq km: 100			
<i>Pleasant Hills</i>				
Associated Petroleum Pty Ltd*	85.00			
Interstate Pipelines Pty Ltd	15.00			
PL14 Bowen/Surat Basin	Blocks: - Sq km: 252	31/05/2007		
<i>Kinora</i>				
Origin Energy CSG Ltd*	100.00			
PL15 Bowen/Surat Basin	Blocks: - Sq km: 259	29/04/2019		
<i>Boxleigh</i>				
Mosaic Oil QLD Pty Ltd*	100.00			
PL16 Bowen/Surat Basin	Blocks: - Sq km: 259	29/04/2019		
<i>Silver Springs</i>				
Mosaic Oil QLD Pty Ltd*	100.00			
PL17 Bowen/Surat Basin	Blocks: 88 Sq km: 104			
<i>Bennett</i>				
Golden West Hydrocarbons Pty Ltd	3.30			
Santos QNT Pty Ltd*	70.00			
Timor Oil Ltd	26.70			
PL18 Bowen/Surat Basin	Blocks: - Sq km: 184	31/08/2024		
<i>Yellowbank Creek</i>				
Brisbane Petroleum NL*	50.00			
Delbaere Associates Pty Ltd	50.00			
PL21 Bowen/Surat Basin	Blocks: - Sq km: 260			
<i>Beldene, Royston</i>				
Angari Pty Ltd	4.50			
Oil Investments Ltd	19.00			
Origin Energy CSG Ltd*	64.00			
Santos QNT Pty Ltd	12.50			
PL22 Bowen/Surat Basin	Blocks: - Sq km: 230			
<i>Waratah</i>				
Angari Pty Ltd	4.50			
Oil Investments Ltd	19.00			
Origin Energy CSG Ltd*	64.00			
Santos QNT Pty Ltd	12.50			
PL23 Cooper/Eromanga Basin	Blocks: - Sq km: 234			
<i>Jackson</i>				
Australian Gasfields Ltd	2.00			
Delhi Petroleum Pty Ltd	32.00			
Drillsearch Energy NL	2.00			
Inland Oil (Production) Pty Ltd	2.00			
Mawson Petroleum Pty Ltd	6.50			
Santos Ltd*	40.00			
Vamgas Pty Ltd	15.50			

Title				
<i>Accumulation</i>				
Company (Operator*)	Equity	Expiry Date		
PL24 Cooper/Eromanga Basin	Blocks: - Sq km: 201			
<i>Jackson South</i>				
Australian Gasfields Ltd	2.00			
Delhi Petroleum Pty Ltd	32.00			
Drillsearch Energy NL	2.00			
Inland Oil (Production) Pty Ltd	2.00			
Mawson Petroleum Pty Ltd	6.50			
Santos Ltd*	40.00			
Vamgas Pty Ltd	15.50			
PL25 Cooper/Eromanga Basin	Blocks: - Sq km: 257			
<i>Nacowlah South</i>				
Australian Gasfields Ltd	2.00			
Delhi Petroleum Pty Ltd	32.00			
Drillsearch Energy NL	2.00			
Inland Oil (Production) Pty Ltd	2.00			
Mawson Petroleum Pty Ltd	6.50			
Santos Ltd*	40.00			
Vamgas Pty Ltd	15.50			
PL26 Cooper/Eromanga Basin	Blocks: - Sq km: 257			
<i>Chookoo</i>				
Australian Gasfields Ltd	2.00			
Delhi Petroleum Pty Ltd	32.00			
Drillsearch Energy NL	2.00			
Inland Oil (Production) Pty Ltd	2.00			
Mawson Petroleum Pty Ltd	6.50			
Santos Ltd*	40.00			
Vamgas Pty Ltd	15.50			
PL27 Bowen/Surat Basin	Blocks: - Sq km: 255	31/08/2005		
<i>Newstead, Yarrabend</i>				
Angari Pty Ltd	4.50			
Oil Investments Ltd	19.00			
Origin Energy CSG Ltd*	64.00			
Santos QNT Pty Ltd	12.50			
PL28 Bowen/Surat Basin	Blocks: - Sq km: 251	30/11/2005		
<i>Avondale</i>				
Interstate Pipelines Pty Ltd	7.50			
Oil Investments Ltd	35.50			
Origin Energy CSG Ltd	10.75			
Santos QNT Pty Ltd*	46.25			
PL29 Cooper/Eromanga Basin	Blocks: - Sq km: 13	19/12/2005		
<i>Tintaburra</i>				
CPC Energy Pty Ltd	1.00			
Drillsearch Energy NL	10.00			
Santos QNT Pty Ltd*	77.00			
Vamgas Pty Ltd	12.00			
PL30 Bowen/Surat Basin	Blocks: - Sq km: 37	8/07/2006		
<i>Riverslea, Yapunya</i>				
Angari Pty Ltd*	55.00			
Bridge Oil Exploration Pty Ltd	7.50			
Mosaic Oil NL	10.00			
Origin Energy CSG Ltd	20.00			
Santos (BOL) Pty Ltd	7.50			
PL31 Cooper/Eromanga Basin	Blocks: - Sq km: 260	26/05/2006		
<i>Bodalla South</i>				
Beach Petroleum Ltd*	80.00			
Mawson Petroleum Pty Ltd	20.00			
PL32 Cooper/Eromanga Basin	Blocks: - Sq km: 260	31/12/2006		
<i>Kenmore</i>				
Beach Petroleum Ltd*	58.00			
Beach Petroleum NL	22.00			
Mawson Petroleum Pty Ltd	20.00			
PL33 Cooper/Eromanga Basin	Blocks: - Sq km: 257	14/04/2007		
<i>Koora, Nockatunga, Winna</i>				
Magellan Petroleum (Eastern) Pty Ltd	40.94			
Santos Gnuco Pty Ltd	7.76			
Santos QNT Pty Ltd*	51.30			
PL34 Cooper/Eromanga Basin	Blocks: - Sq km: 239	10/07/2007		
<i>Sigma, Tickalara</i>				
Delhi Petroleum Pty Ltd	30.00			
Santos Ltd*	37.50			
Santos Petroleum Pty Ltd	25.00			
Vamgas Pty Ltd	7.50			
PL35 Cooper/Eromanga Basin	Blocks: - Sq km: 136	10/07/2007		
<i>Watson, Watson South</i>				
Australian Gasfields Ltd	2.00			
Delhi Petroleum Pty Ltd	32.00			
Drillsearch Energy NL	2.00			
Inland Oil (Production) Pty Ltd	2.00			
Mawson Petroleum Pty Ltd	6.50			
Santos Ltd*	40.00			
Vamgas Pty Ltd	15.50			

KEY TO PETROLEUM EXPLORATION AND DEVELOPMENT TITLES

Title				
<i>Accumulation</i>				
Company (Operator*)	Equity	Expiry Date		
PL36 Cooper/Eromanga Basin	Blocks: -	Sq km: 61	7/04/2008	
<i>Nacowlah</i>				
Australian Gasfields Ltd	2.00			
Delhi Petroleum Pty Ltd	32.00			
Drillsearch Energy NL	2.00			
Inland Oil (Production) Pty Ltd	2.00			
Mawson Petroleum Pty Ltd	6.50			
Santos Ltd*	40.00			
Vamgas Pty Ltd	15.50			
PL37 Cooper/Eromanga Basin	Blocks: -	Sq km: 12	18/09/2007	
<i>Brumby</i>				
Delhi Petroleum Pty Ltd	30.00			
Santos Ltd*	37.50			
Santos Petroleum Pty Ltd	25.00			
Vamgas Pty Ltd	7.50			
PL38 Cooper/Eromanga Basin	Blocks: -	Sq km: 135	16/06/2008	
<i>Toobunyah</i>				
CPC Energy Pty Ltd	1.00			
Drillsearch Energy NL	10.00			
Santos QNT Pty Ltd*	77.00			
Vamgas Pty Ltd	12.00			
PL39 Cooper/Eromanga Basin	Blocks: -	Sq km: 107	13/08/2008	
<i>Talgeberry</i>				
CPC Energy Pty Ltd	1.00			
Drillsearch Energy NL	10.00			
Santos QNT Pty Ltd*	77.00			
Vamgas Pty Ltd	12.00			
PL40 Bowen/Surat Basin	Blocks: -	Sq km: 76	13/09/2008	
<i>Louise</i>				
Brisbane Petroleum NL*	50.00			
Delbaere Associates Pty Ltd	50.00			
PL41 Bowen/Surat Basin	Blocks: -	Sq km: 157	25/05/2010	
<i>Arcturus</i>				
Origin Energy CSG Ltd	50.00			
Santos QNT Pty Ltd*	50.00			
PL42 Bowen/Surat Basin	Blocks: -	Sq km: 150	25/05/2010	
<i>Rolleston</i>				
Origin Energy CSG Ltd	50.00			
Santos QNT Pty Ltd*	50.00			
PL43 Bowen/Surat Basin	Blocks: -	Sq km: 179	25/05/2010	
<i>Yellowbank</i>				
Origin Energy Bonaparte Pty Ltd	50.00			
Santos QNT Pty Ltd*	50.00			
PL44 Bowen/Surat Basin	Blocks: -	Sq km: 201	25/05/2010	
<i>Mervale</i>				
Origin Energy CSG Ltd	50.00			
Santos QNT Pty Ltd*	50.00			
PL45 Bowen/Surat Basin	Blocks: -	Sq km: 108	25/05/2010	
<i>Glentulloch</i>				
Origin Energy CSG Ltd*	50.00			
Santos QNT Pty Ltd	50.00			
PL46 Bowen/Surat Basin	Blocks: -	Sq km: 34	23/02/2010	
<i>Fairymount</i>				
Mosaic Oil NL*	100.00			
PL47 Cooper/Eromanga Basin	Blocks: -	Sq km: 28	22/08/2010	
<i>Black Stump</i>				
Beach Petroleum Ltd*	58.00			
Beach Petroleum NL	22.00			
Mawson Petroleum Pty Ltd	20.00			
PL48 Bowen/Surat Basin	Blocks: -	Sq km: 7	31/01/2011	
Mosaic Oil NL*	100.00			
PL49 Bowen/Surat Basin	Blocks: -	Sq km: 22	31/01/2011	
<i>Taylor</i>				
Mosaic Oil NL*	100.00			
PL50 Cooper/Eromanga Basin	Blocks: -	Sq km: 49	27/06/2011	
<i>Maxwell, Maxwell South</i>				
Magellan Petroleum (Eastern) Pty Ltd	40.93			
Santos Gnuco Pty Ltd	7.77			
Santos QNT Pty Ltd*	51.30			
PL51 Cooper/Eromanga Basin	Blocks: -	Sq km: 55	27/06/2011	
<i>Dilkeria, Muthero, Thungo</i>				
Magellan Petroleum (Eastern) Pty Ltd	40.93			
Santos Gnuco Pty Ltd	7.77			
Santos QNT Pty Ltd*	51.30			
PL52 Cooper/Eromanga Basin	Blocks: -	Sq km: 70	27/06/2011	
<i>Ipundu, Ipundu North, Tarbat</i>				
CPC Energy Pty Ltd	1.00			
Drillsearch Energy NL	10.00			
Santos QNT Pty Ltd*	77.00			
Vamgas Pty Ltd	12.00			
PL53 Bowen/Surat Basin	Blocks: -	Sq km: 46	10/09/2011	
<i>Yambugle</i>				
Origin Energy CSG Ltd*	100.00			

Title				
<i>Accumulation</i>				
Company (Operator*)	Equity	Expiry Date		
PL54 Bowen/Surat Basin	Blocks: -	Sq km: 34	27/03/2012	
<i>Maarooloo</i>				
Origin Energy CSG Ltd*	50.00			
Santos QNT Pty Ltd	50.00			
PL55 Cooper/Eromanga Basin	Blocks: -	Sq km: 19	12/06/2012	
<i>Munro</i>				
Delhi Petroleum Pty Ltd	40.00			
Santos Ltd*	52.00			
Vamgas Pty Ltd	8.00			
PL56 Bowen/Surat Basin	Blocks: -	Sq km: 19	29/01/2011	
<i>Broadway</i>				
Angari Pty Ltd*	49.00			
Bridge Oil Exploration Pty Ltd	7.50			
Mosaic Oil NL	10.00			
Mosaic Oil QLD Pty Ltd	6.00			
Origin Energy CSG Ltd	20.00			
Santos (BOL) Pty Ltd	7.50			
PL57 Cooper/Eromanga Basin	Blocks: -	Sq km: 19	15/04/2013	
<i>Endeavour</i>				
CPC Energy Pty Ltd	1.00			
Drillsearch Energy NL	10.00			
Santos QNT Pty Ltd*	77.00			
Vamgas Pty Ltd	12.00			
PL58 Cooper/Eromanga Basin	Blocks: -	Sq km: 62	15/04/2034	
<i>Challum</i>				
Delhi Petroleum Pty Ltd	30.00			
Santos Australian Hydrocarbons Pty Ltd	5.00			
Santos Ltd*	57.50			
Vamgas Pty Ltd	7.50			
PL59 Cooper/Eromanga Basin	Blocks: -	Sq km: 97	15/04/2034	
<i>Challum</i>				
Delhi Petroleum Pty Ltd	20.00			
Origin Energy Resources Ltd	25.00			
Santos Ltd*	25.00			
Santos Petroleum Pty Ltd	25.00			
Vamgas Pty Ltd	5.00			
PL60 Cooper/Eromanga Basin	Blocks: -	Sq km: 70	15/04/2019	
<i>Munkah</i>				
Delhi Petroleum Pty Ltd	20.00			
Origin Energy Resources Ltd	25.00			
Santos Ltd*	25.00			
Santos Petroleum Pty Ltd	25.00			
Vamgas Pty Ltd	5.00			
PL61 Cooper/Eromanga Basin	Blocks: -	Sq km: 159	15/04/2019	
<i>Balleria, Ballera West, Yanda</i>				
Delhi Petroleum Pty Ltd	20.00			
Origin Energy Resources Ltd	25.00			
Santos Ltd*	25.00			
Santos Petroleum Pty Ltd	25.00			
Vamgas Pty Ltd	5.00			
PL62 Cooper/Eromanga Basin	Blocks: -	Sq km: 65		
<i>Judga</i>				
Australian Gasfields Ltd	2.00			
Delhi Petroleum Pty Ltd	32.00			
Drillsearch Energy NL	2.00			
Inland Oil (Production) Pty Ltd	2.00			
Mawson Petroleum Pty Ltd	6.50			
Santos Ltd*	40.00			
Vamgas Pty Ltd	15.50			
PL63 Cooper/Eromanga Basin	Blocks: -	Sq km: 145	24/06/2017	
<i>Epsilon</i>				
Delhi Petroleum Pty Ltd	30.00			
Santos Ltd*	37.50			
Santos Petroleum Pty Ltd	25.00			
Vamgas Pty Ltd	7.50			
PL64 Bowen/Surat Basin	Blocks: -	Sq km: 48	19/08/2013	
<i>Cogon</i>				
Angari Pty Ltd	4.50			
Origin Energy CSG Ltd*	83.00			
Santos QNT Pty Ltd	12.50			
PL65 Adavale Basin	Blocks: -	Sq km: 59	15/12/2014	
<i>Gilmore</i>				
Australian Gasfields Ltd*	100.00			
PL66 Bowen/Surat Basin	Blocks: -	Sq km: 125	23/02/2007	
<i>Roswin</i>				
Mosaic Oil QLD Pty Ltd*	100.00			
PL67 Bowen/Surat Basin	Blocks: -	Sq km: 113	23/06/2011	
<i>Turkey Creek</i>				
Origin Energy CSG Ltd*	50.00			
Santos QNT Pty Ltd	50.00			

KEY TO PETROLEUM EXPLORATION AND DEVELOPMENT TITLES

Title				
<i>Accumulation</i>				
Company (Operator*)		Equity	Expiry Date	
PL68	Cooper/Eromanga Basin	Blocks: -	Sq km: 25	
<i>Coopers Creek</i>				
Delhi Petroleum Pty Ltd		30.00		
Santos Ltd*		37.50		
Santos Petroleum Pty Ltd		25.00		
Vamgas Pty Ltd		7.50		
PL69	Bowen/Surat Basin	Blocks: 4	Sq km: 303	8/12/2005
<i>Interstate Pipelines Pty Ltd</i>				
Oil Investments Ltd		35.50		
Origin Energy CSG Ltd		10.75		
Santos QNT Pty Ltd*		46.25		
PL70	Cooper/Eromanga Basin	Blocks: -	Sq km: 3	
<i>Berwick</i>				
Origin Energy CSG Ltd*		100.00		
PL71	Bowen/Surat Basin	Blocks: -	Sq km: 134	15/12/2014
<i>Namarah, Parknook</i>				
Angari Pty Ltd*		67.50		
Origin Energy CSG Ltd		22.50		
Santos QNT Pty Ltd		10.00		
PL72	Bowen/Surat Basin	Blocks: -	Sq km: 19	
<i>Xyloleum</i>				
Sykes Ian Grant*		100.00		
PL73	Bowen/Surat Basin	Blocks: -	Sq km: 7	
<i>Xylex</i>				
Sykes Ian Grant*		100.00		
PL74	Bowen/Surat Basin	Blocks: -	Sq km: 19	
<i>Major</i>				
Angari Pty Ltd		49.00		
Bridge Oil Exploration Pty Ltd		7.50		
Mosaic Oil NL		10.00		
Mosaic Oil QLD Pty Ltd		6.00		
Origin Energy CSG Ltd*		20.00		
Santos (BOL) Pty Ltd		7.50		
PL75	Cooper/Eromanga Basin	Blocks: -	Sq km: 13	23/11/2008
<i>Orientos</i>				
Delhi Petroleum Pty Ltd		30.00		
Santos Ltd*		37.50		
Santos Petroleum Pty Ltd		25.00		
Vamgas Pty Ltd		7.50		
PL76	Cooper/Eromanga Basin	Blocks: -	Sq km: 40	23/11/2008
<i>Bolan, Corella, Echuburra, Natan</i>				
Australian Gasfields Ltd		2.00		
Delhi Petroleum Pty Ltd		32.00		
Drillsearch Energy NL		2.00		
Inland Oil (Production) Pty Ltd		2.00		
Mawson Petroleum Pty Ltd		6.50		
Santos Ltd*		40.00		
Vamgas Pty Ltd		15.50		
PL77	Cooper/Eromanga Basin	Blocks: -	Sq km: 13	
<i>Jarrar</i>				
Australian Gasfields Ltd		2.00		
Delhi Petroleum Pty Ltd		32.00		
Drillsearch Energy NL		2.00		
Inland Oil (Production) Pty Ltd		2.00		
Mawson Petroleum Pty Ltd		6.50		
Santos Ltd*		40.00		
Vamgas Pty Ltd		15.50		
PL78	Cooper/Eromanga Basin	Blocks: -	Sq km: 13	23/11/2008
<i>Bowen</i>				
Australian Gasfields Ltd		2.00		
Delhi Petroleum Pty Ltd		32.00		
Drillsearch Energy NL		2.00		
Inland Oil (Production) Pty Ltd		2.00		
Mawson Petroleum Pty Ltd		6.50		
Santos Ltd*		40.00		
Vamgas Pty Ltd		15.50		
PL79	Cooper/Eromanga Basin	Blocks: -	Sq km: 7	6/09/2020
<i>Costa</i>				
Australian Gasfields Ltd		2.00		
Delhi Petroleum Pty Ltd		32.00		
Drillsearch Energy NL		2.00		
Inland Oil (Production) Pty Ltd		2.00		
Mawson Petroleum Pty Ltd		6.50		
Santos Ltd*		40.00		
Vamgas Pty Ltd		15.50		
PL80	Cooper/Eromanga Basin	Blocks: -	Sq km: 92	6/09/2032
<i>Durham Downs</i>				
Delhi Petroleum Pty Ltd		30.00		
Santos Australian Hydrocarbons Pty Ltd		5.00		
Santos Ltd*		57.50		
Vamgas Pty Ltd		7.50		

Title				
<i>Accumulation</i>				
Company (Operator*)		Equity	Expiry Date	
PL81	Cooper/Eromanga Basin	Blocks: -	Sq km: 40	6/09/2020
<i>Karmona</i>				
Delhi Petroleum Pty Ltd		20.00		
Origin Energy Resources Ltd		25.00		
Santos Ltd*		25.00		
Santos Petroleum Pty Ltd		25.00		
Vamgas Pty Ltd		5.00		
PL82	Cooper/Eromanga Basin	Blocks: -	Sq km: 11	6/09/2020
<i>Okotoko East</i>				
Australian Gasfields Ltd		2.00		
Delhi Petroleum Pty Ltd		32.00		
Drillsearch Energy NL		2.00		
Inland Oil (Production) Pty Ltd		2.00		
Mawson Petroleum Pty Ltd		6.50		
Santos Ltd*		40.00		
Vamgas Pty Ltd		15.50		
PL83	Cooper/Eromanga Basin	Blocks: -	Sq km: 14	6/09/2020
<i>Okotoko West</i>				
Delhi Petroleum Pty Ltd		20.00		
Origin Energy Resources Ltd		25.00		
Santos Ltd*		25.00		
Santos Petroleum Pty Ltd		25.00		
Vamgas Pty Ltd		5.00		
PL84	Cooper/Eromanga Basin	Blocks: -	Sq km: 49	6/09/2020
<i>Stokes</i>				
Delhi Petroleum Pty Ltd		30.00		
Santos Ltd*		37.50		
Santos Petroleum Pty Ltd		25.00		
Vamgas Pty Ltd		7.50		
PL85	Cooper/Eromanga Basin	Blocks: -	Sq km: 18	6/09/2032
<i>Wackett</i>				
Delhi Petroleum Pty Ltd		20.00		
Origin Energy Resources Ltd		25.00		
Santos Ltd*		25.00		
Santos Petroleum Pty Ltd		25.00		
Vamgas Pty Ltd		5.00		
PL86	Cooper/Eromanga Basin	Blocks: -	Sq km: 12	6/09/2032
<i>Wackett</i>				
Delhi Petroleum Pty Ltd		22.50		
Origin Energy Resources Ltd		25.00		
Santos Ltd*		28.12		
Santos Petroleum Pty Ltd		18.75		
Vamgas Pty Ltd		5.63		
PL87	Cooper/Eromanga Basin	Blocks: -	Sq km: 28	6/09/2020
<i>Wippo</i>				
Australian Gasfields Ltd		2.00		
Delhi Petroleum Pty Ltd		32.00		
Drillsearch Energy NL		2.00		
Inland Oil (Production) Pty Ltd		2.00		
Mawson Petroleum Pty Ltd		6.50		
Santos Ltd*		40.00		
Vamgas Pty Ltd		15.50		
PL88	Cooper/Eromanga Basin	Blocks: -	Sq km: 46	6/09/2020
<i>Wolggalla</i>				
Delhi Petroleum Pty Ltd		30.00		
Santos Ltd*		37.50		
Santos Petroleum Pty Ltd		25.00		
Vamgas Pty Ltd		7.50		
PL89	Bowen/Surat Basin	Blocks: -	Sq km: 59	
<i>Blackbutt, Bloodwood</i>				
Interstate Pipelines Pty Ltd		7.50		
Oil Investments Ltd		35.50		
Origin Energy CSG Ltd		10.75		
Santos QNT Pty Ltd*		46.25		
PL90	Bowen/Surat Basin	Blocks: -	Sq km: 232	29/11/2029
<i>Fairview</i>				
Tri-Star Petroleum Company*		100.00		
PL91	Bowen/Surat Basin	Blocks: -	Sq km: 232	29/11/2029
<i>Fairview</i>				
Tri-Star Petroleum Company*		100.00		
PL92	Bowen/Surat Basin	Blocks: -	Sq km: 232	29/11/2029
<i>Fairview</i>				
Tri-Star Petroleum Company*		100.00		
PL93	Bowen/Surat Basin	Blocks: -	Sq km: 7	
<i>Stakeyard</i>				
Associated Petroleum Pty Ltd*		85.00		
Interstate Pipelines Pty Ltd		15.00		
PL94	Bowen/Surat Basin	Blocks: -	Sq km: 209	17/04/2032
<i>Moura</i>				
Oil Company of Australia (Moura) Pty Ltd*		100.00		

KEY TO PETROLEUM EXPLORATION AND DEVELOPMENT TITLES

Title				
<i>Accumulation</i>				
Company (Operator*)	Equity	Expiry Date		
PL95 Cooper/Eromanga Basin	Blocks: -	Sq km: 13	25/08/2019	
<i>Mouler</i>				
CPC Energy Pty Ltd	1.00			
Drillsearch Energy NL	10.00			
Santos QNT Pty Ltd*	77.00			
Vamgas Pty Ltd	12.00			
PL97 Cooper/Eromanga Basin	Blocks: -	Sq km: 28	25/08/2014	
<i>Cook</i>				
Delhi Petroleum Pty Ltd	20.00			
Origin Energy Resources Ltd	25.00			
Santos Ltd*	25.00			
Santos Petroleum Pty Ltd	25.00			
Vamgas Pty Ltd	5.00			
PL98 Cooper/Eromanga Basin	Blocks: -	Sq km: 40	23/10/2021	
<i>Inland</i>				
Inland Oil (Production) Pty Ltd	20.00			
Innovative Technological Geo-Exploration Pty Ltd	28.22			
IOR Exploration Pty Ltd*	29.38			
Moroil Pty Ltd	22.40			
PL99 Bowen/Surat Basin	Blocks: -	Sq km: 232	15/12/2033	
<i>Fairview</i>				
Tri-Star Petroleum Company*	100.00			
PL100 Bowen/Surat Basin	Blocks: -	Sq km: 232	15/12/2033	
<i>Fairview</i>				
Tri-Star Petroleum Company*	100.00			
PL101 Bowen/Surat Basin	Blocks: -	Sq km: 240	20/11/2031	
<i>Peat</i>				
Oil Company of Australia (Moura) Pty Ltd	50.00			
Origin Energy CSG Ltd*	50.00			
PL105 Cooper/Eromanga Basin	Blocks: -	Sq km: 13	28/10/2008	
<i>Roti</i>				
Australian Gasfields Ltd	2.00			
Delhi Petroleum Pty Ltd	32.00			
Drillsearch Energy NL	2.00			
Inland Oil (Production) Pty Ltd	2.00			
Mawson Petroleum Pty Ltd	6.50			
Santos Ltd*	40.00			
Vamgas Pty Ltd	15.50			
PL106 Cooper/Eromanga Basin	Blocks: -	Sq km: 6	28/10/2006	
<i>Okotoko West</i>				
Delhi Petroleum Pty Ltd	20.00			
Origin Energy Resources Ltd	25.00			
Santos Ltd	25.00			
Santos Petroleum Pty Ltd*	25.00			
Vamgas Pty Ltd	5.00			
PL107 Cooper/Eromanga Basin	Blocks: -	Sq km: 13	28/10/2008	
<i>Okotoko East</i>				
Australian Gasfields Ltd	2.00			
Delhi Petroleum Pty Ltd	32.00			
Drillsearch Energy NL	2.00			
Inland Oil (Production) Pty Ltd	2.00			
Mawson Petroleum Pty Ltd	6.50			
Santos Ltd*	40.00			
Vamgas Pty Ltd	15.50			
PL108 Cooper/Eromanga Basin	Blocks: -	Sq km: 6	28/10/2028	
<i>Costa South</i>				
Delhi Inter Oil Corp	20.00			
Origin Energy Resources Ltd	25.00			
Santos Ltd*	25.00			
Santos Petroleum Pty Ltd	25.00			
Vamgas Pty Ltd	5.00			
PL109 Cooper/Eromanga Basin	Blocks: -	Sq km: 10	29/10/2013	
<i>Judga North</i>				
Australian Gasfields Ltd	2.00			
Delhi Petroleum Pty Ltd	32.00			
Drillsearch Energy NL	2.00			
Inland Oil (Production) Pty Ltd	2.00			
Mawson Petroleum Pty Ltd	6.50			
Santos Ltd*	40.00			
Vamgas Pty Ltd	15.50			
PL110 Cooper/Eromanga Basin	Blocks: -	Sq km: 19	29/10/2013	
<i>Stokes North</i>				
Delhi Petroleum Pty Ltd	30.00			
Santos Ltd*	37.50			
Santos Petroleum Pty Ltd	25.00			
Vamgas Pty Ltd	7.50			
PL111 Cooper/Eromanga Basin	Blocks: -	Sq km: 19	28/10/2016	
<i>Yawa</i>				
Delhi Petroleum Pty Ltd	20.00			
Origin Energy Resources Ltd	25.00			
Santos Ltd*	25.00			
Santos Petroleum Pty Ltd	25.00			
Vamgas Pty Ltd	5.00			

Title				
<i>Accumulation</i>				
Company (Operator*)	Equity	Expiry Date		
PL112 Cooper/Eromanga Basin	Blocks: -	Sq km: 92	10/03/2047	
<i>Barrulka</i>				
Delhi Petroleum Pty Ltd	20.00			
Origin Energy Resources Ltd	25.00			
Santos Ltd*	25.00			
Santos Petroleum Pty Ltd	25.00			
Vamgas Pty Ltd	5.00			
PL113 Cooper/Eromanga Basin	Blocks: -	Sq km: 74	28/10/2018	
<i>Tartulla</i>				
Delhi Petroleum Pty Ltd	28.80			
Origin Energy Resources Ltd	10.00			
Santos Australian Hydrocarbons Pty Ltd	2.00			
Santos Ltd*	52.00			
Vamgas Pty Ltd	7.20			
PL114 Cooper/Eromanga Basin	Blocks: -	Sq km: 55	29/10/2021	
<i>Wareena</i>				
Delhi Petroleum Pty Ltd	28.80			
Origin Energy Resources Ltd	10.00			
Santos Australian Hydrocarbons Pty Ltd	2.00			
Santos Ltd*	52.00			
Vamgas Pty Ltd	7.20			
PL115 Cooper/Eromanga Basin	Blocks: -	Sq km: 52	28/09/2019	
<i>Bunya</i>				
Australian Gasfields Ltd*	100.00			
PL116 Cooper/Eromanga Basin	Blocks: -	Sq km: 34	28/09/2019	
<i>Cocas</i>				
Australian Gasfields Ltd*	100.00			
PL117 Cooper/Eromanga Basin	Blocks: -	Sq km: 49	28/09/2019	
<i>Vernon</i>				
Vernon E Faulconer Australia Inc*	100.00			
PL119 Bowen/Surat Basin	Blocks: -	Sq km: 22	11/11/2010	
<i>Downlands</i>				
Mosaic Oil NL	83.33			
Santos (BOL) Pty Ltd	16.67			
PL129 Cooper/Eromanga Basin	Blocks: -	Sq km: 46	15/12/2037	
<i>Ashby, Ashby North</i>				
Delhi Petroleum Pty Ltd	30.00			
Santos Ltd*	37.50			
Santos Petroleum Pty Ltd	25.00			
Vamgas Pty Ltd	7.50			
PL130 Cooper/Eromanga Basin	Blocks: -	Sq km: 31	23/06/2024	
<i>Chiron</i>				
Delhi Petroleum Pty Ltd	30.00			
Santos Ltd*	37.50			
Santos Petroleum Pty Ltd	25.00			
Vamgas Pty Ltd	7.50			
PL131 Cooper/Eromanga Basin	Blocks: -	Sq km: 225	23/06/2050	
<i>Baryulah, Baryulah East, Hera, Juno, Vega</i>				
Delhi Petroleum Pty Ltd	22.50			
Origin Energy Resources Ltd	25.00			
Santos Ltd*	28.13			
Santos Petroleum Pty Ltd	18.75			
Vamgas Pty Ltd	5.62			
PL132 Cooper/Eromanga Basin	Blocks: -	Sq km: 16	23/06/2021	
<i>Costa Central</i>				
Delhi Petroleum Pty Ltd	20.00			
Origin Energy Resources Ltd	25.00			
Santos Ltd*	25.00			
Santos Petroleum Pty Ltd	25.00			
Vamgas Pty Ltd	5.00			
PL133 Cooper/Eromanga Basin	Blocks: -	Sq km: 13	12/12/2019	
<i>Goora</i>				
Australian Gasfields Ltd	2.00			
Delhi Petroleum Pty Ltd	32.00			
Drillsearch Energy NL	2.00			
Inland Oil (Production) Pty Ltd	2.00			
Mawson Petroleum Pty Ltd	6.50			
Santos Ltd*	40.00			
Vamgas Pty Ltd	15.50			
PL134 Cooper/Eromanga Basin	Blocks: -	Sq km: 27	20/12/2058	
<i>Kappa</i>				
Delhi Petroleum Pty Ltd	30.00			
Santos Ltd*	37.50			
Santos Petroleum Pty Ltd	25.00			
Vamgas Pty Ltd	7.50			
PL135 Cooper/Eromanga Basin	Blocks: -	Sq km: 20	23/06/2053	
<i>Kelior</i>				
Delhi Petroleum Pty Ltd	20.00			
Origin Energy Resources Ltd	25.00			
Santos Ltd*	25.00			
Santos Petroleum Pty Ltd	25.00			
Vamgas Pty Ltd	5.00			

KEY TO PETROLEUM EXPLORATION AND DEVELOPMENT TITLES

Title				
<i>Accumulation</i>				
Company (Operator*)		Equity	Expiry Date	
PL136	Cooper/Eromanga Basin	Blocks: -	Sq km: 54	23/06/2052
<i>Keilor</i>				
Delhi Petroleum Pty Ltd		30.00		
Santos Australian Hydrocarbons Pty Ltd		5.00		
Santos Ltd*		57.50		
Vamgas Pty Ltd		7.50		
PL137	Cooper/Eromanga Basin	Blocks: -	Sq km: 88	15/12/2052
<i>Macadama</i>				
Delhi Petroleum Pty Ltd		30.00		
Santos Australian Hydrocarbons Pty Ltd		5.00		
Santos Ltd*		57.50		
Vamgas Pty Ltd		7.50		
PL138	Cooper/Eromanga Basin	Blocks: -	Sq km: 77	15/12/2030
<i>Marengo</i>				
Delhi Petroleum Pty Ltd		25.20		
Origin Energy Resources Ltd		27.00		
Santos Ltd*		31.50		
Vamgas Pty Ltd		16.30		
PL139	Cooper/Eromanga Basin	Blocks: -	Sq km: 26	23/06/2017
<i>Monte</i>				
Delhi Petroleum Pty Ltd		20.00		
Origin Energy Resources Ltd		25.00		
Santos Ltd*		25.00		
Santos Petroleum Pty Ltd		25.00		
Vamgas Pty Ltd		5.00		
PL140	Cooper/Eromanga Basin	Blocks: -	Sq km: 37	15/12/2053
<i>Moon</i>				
Delhi Petroleum Pty Ltd		30.00		
Santos Ltd*		37.50		
Santos Petroleum Pty Ltd		25.00		
Vamgas Pty Ltd		7.50		
PL141	Cooper/Eromanga Basin	Blocks: -	Sq km: 46	15/12/2025
<i>Mount Howitt</i>				
Delhi Petroleum Pty Ltd		28.80		
Origin Energy Resources Ltd		10.00		
Santos Australian Hydrocarbons Pty Ltd		2.00		
Santos Ltd*		52.00		
Vamgas Pty Ltd		7.20		
PL142	Cooper/Eromanga Basin	Blocks: -	Sq km: 13	15/12/2024
<i>Raffle</i>				
Delhi Petroleum Pty Ltd		30.00		
Santos Ltd*		37.50		
Santos Petroleum Pty Ltd		25.00		
Vamgas Pty Ltd		7.50		
PL143	Cooper/Eromanga Basin	Blocks: -	Sq km: 28	15/12/2018
<i>Ruby</i>				
Delhi Petroleum Pty Ltd		30.00		
Santos Ltd*		37.50		
Santos Petroleum Pty Ltd		25.00		
Vamgas Pty Ltd		7.50		
PL144	Cooper/Eromanga Basin	Blocks: -	Sq km: 34	15/12/2039
<i>Thoar</i>				
Delhi Petroleum Pty Ltd		30.00		
Santos Ltd		37.50		
Santos Petroleum Pty Ltd		25.00		
Vamgas Pty Ltd*		7.50		
PL145	Cooper/Eromanga Basin	Blocks: -	Sq km: 28	15/12/2048
<i>Toby</i>				
Delhi Petroleum Pty Ltd		28.80		
Origin Energy Resources Ltd		10.00		
Santos Australian Hydrocarbons Pty Ltd		2.00		
Santos Ltd*		52.00		
Vamgas Pty Ltd		7.20		
PL146	Cooper/Eromanga Basin	Blocks: -	Sq km: 61	23/06/2025
<i>Wackett</i>				
Delhi Petroleum Pty Ltd		22.50		
Origin Energy Resources Ltd		25.00		
Santos Ltd		28.13		
Santos Petroleum Pty Ltd		18.75		
Vamgas Pty Ltd		5.62		
PL147	Cooper/Eromanga Basin	Blocks: -	Sq km: 58	23/06/2019
<i>Wackett</i>				
Delhi Petroleum Pty Ltd		20.00		
Origin Energy Resources Ltd		25.00		
Santos Ltd*		25.00		
Santos Petroleum Pty Ltd		25.00		
Vamgas Pty Ltd		5.00		
PL148	Cooper/Eromanga Basin	Blocks: -	Sq km: 37	15/12/2029
<i>Whanto</i>				
Delhi Petroleum Pty Ltd		28.80		
Origin Energy Resources Ltd		10.00		
Santos Australian Hydrocarbons Pty Ltd		2.00		
Santos Ltd*		52.00		
Vamgas Pty Ltd		7.20		

Title				
<i>Accumulation</i>				
Company (Operator*)		Equity	Expiry Date	
PL149	Cooper/Eromanga Basin	Blocks: -	Sq km: 13	23/06/2049
<i>Wippo South</i>				
Australian Gasfields Ltd		2.00		
Delhi Petroleum Pty Ltd		32.00		
Drillsearch Energy NL		2.00		
Inland Oil (Production) Pty Ltd		2.00		
Mawson Petroleum Pty Ltd		6.50		
Santos Ltd*		40.00		
Vamgas Pty Ltd		15.50		
PL150	Cooper/Eromanga Basin	Blocks: -	Sq km: 158	23/06/2042
<i>Dingera, Psyche, Winninia</i>				
Delhi Petroleum Pty Ltd		30.00		
Santos Ltd*		37.50		
Santos Petroleum Pty Ltd		25.00		
Vamgas Pty Ltd		7.50		
PL151	Cooper/Eromanga Basin	Blocks: 156	Sq km: 156	24/07/2032
Delhi Petroleum Pty Ltd		20.00		
Origin Energy Resources Ltd		25.00		
Santos Ltd*		25.00		
Santos Petroleum Pty Ltd		25.00		
Vamgas Pty Ltd		5.00		
PL152	Cooper/Eromanga Basin	Blocks: -	Sq km: 147	24/07/2032
Delhi Petroleum Pty Ltd		20.00		
Origin Energy Resources Ltd		25.00		
Santos Ltd*		25.00		
Santos Petroleum Pty Ltd		25.00		
Vamgas Pty Ltd		5.00		
PL153	Cooper/Eromanga Basin	Blocks: -	Sq km: 103	15/12/2046
<i>Clinton</i>				
Delhi Petroleum Pty Ltd		28.80		
Origin Energy Resources Ltd		10.00		
Santos Australian Hydrocarbons Pty Ltd		2.00		
Santos Ltd*		52.00		
Vamgas Pty Ltd		7.20		
PL154	Cooper/Eromanga Basin	Blocks: -	Sq km: 18	15/12/2046
<i>Clinton</i>				
Delhi Petroleum Pty Ltd		25.20		
Origin Energy Resources Ltd		27.00		
Santos Ltd*		31.50		
Vamgas Pty Ltd		16.30		
PL155	Cooper/Eromanga Basin	Blocks: -	Sq km: 175	24/07/2032
Delhi Petroleum Pty Ltd		20.00		
Origin Energy Resources Ltd		25.00		
Santos Ltd*		25.00		
Santos Petroleum Pty Ltd		25.00		
Vamgas Pty Ltd		5.00		
PL156	Cooper/Eromanga Basin	Blocks: -	Sq km: 31	24/07/2032
Delhi Petroleum Pty Ltd		30.00		
Santos Australian Hydrocarbons Pty Ltd		5.00		
Santos Ltd*		57.50		
Vamgas Pty Ltd		7.50		
PL157	Cooper/Eromanga Basin	Blocks: -	Sq km: 40	15/12/2020
<i>Ghina</i>				
Delhi Petroleum Pty Ltd		28.80		
Origin Energy Resources Ltd		10.00		
Santos Australian Hydrocarbons Pty Ltd		2.00		
Santos Ltd*		52.00		
Vamgas Pty Ltd		7.20		
PL158	Cooper/Eromanga Basin	Blocks: -	Sq km: 188	15/12/2020
<i>Marama</i>				
Delhi Petroleum Pty Ltd		28.80		
Origin Energy Resources Ltd		10.00		
Santos Australian Hydrocarbons Pty Ltd		2.00		
Santos Ltd*		52.00		
Vamgas Pty Ltd		7.20		
PL159	Cooper/Eromanga Basin	Blocks: -	Sq km: 28	15/12/2052
<i>Tallalia</i>				
Delhi Petroleum Pty Ltd		30.00		
Santos Australian Hydrocarbons Pty Ltd		5.00		
Santos Ltd*		57.50		
Vamgas Pty Ltd		7.50		
PL168	Cooper/Eromanga Basin	Blocks: -	Sq km: 13	12/02/2014
<i>Tennaperra</i>				
Delhi Petroleum Pty Ltd		30.00		
Santos Ltd*		37.50		
Santos Petroleum Pty Ltd		25.00		
Vamgas Pty Ltd		7.50		

KEY TO PETROLEUM EXPLORATION AND DEVELOPMENT TITLES

Title				
<i>Accumulation</i>				
Company (Operator*)	Equity	Expiry Date		
PL169 Eromanga Basin	Blocks: -	Sq km: 19	12/04/2017	
<i>Gimboola</i>				
CPC Energy Pty Ltd	1.00			
Drillsearch Energy NL	10.00			
Santos QNT Pty Ltd*	77.00			
Vamgas Pty Ltd	12.00			
PL170 Eromanga Basin	Blocks: -	Sq km: 92	12/04/2017	
<i>Koorooa</i>				
CPC Energy Pty Ltd	1.00			
Drillsearch Energy NL	10.00			
Santos QNT Pty Ltd*	77.00			
Vamgas Pty Ltd	12.00			
PL171 Surat Basin	Blocks: -	Sq km: 176	29/09/2034	
Roma Petroleum NL*	80.00			
Victoria Petroleum NL	20.00			
PL173 Bowen/Surat Basin	Blocks: -	Sq km: 85	15/12/2019	
<i>Yandina</i>				
Origin Energy CSG Ltd*	50.00			
Santos QNT Pty Ltd	50.00			
PL174 Bowen/Surat Basin	Blocks: -	Sq km: 43	15/12/2014	
<i>Myall Creek</i>				
Origin Energy CSG Ltd*	100.00			
PL175 Cooper/Eromanga Basin	Blocks: -	Sq km: 28	19/04/2025	
<i>Windigo</i>				
Australian Gasfields Ltd	2.00			
Delhi Petroleum Pty Ltd	32.00			
Drillsearch Energy NL	2.00			
Inland Oil (Production) Pty Ltd	2.00			
Mawson Petroleum Pty Ltd	6.50			
Santos Ltd*	40.00			
Vamgas Pty Ltd	15.50			
PL176 Bowen/Surat Basin	Blocks: -	Sq km: 213	7/06/2021	
<i>Scotia</i>				
Santos QNT Pty Ltd	84.38			
Vamgas Pty Ltd	15.62			
PL177 Cooper/Eromanga Basin	Blocks: -	Sq km: 55	12/09/2035	
<i>Winninia</i>				
Delhi Petroleum Pty Ltd	22.50			
Origin Energy Resources Ltd	25.00			
Santos Ltd	28.13			
Santos Petroleum Pty Ltd	18.75			
Vamgas Pty Ltd	5.62			
PL178 Cooper/Eromanga Basin	Blocks: -	Sq km: 10	12/09/2035	
Delhi Petroleum Pty Ltd	30.00			
Santos Ltd	37.50			
Santos Petroleum Pty Ltd	25.00			
Vamgas Pty Ltd	7.50			
PL181 Cooper/Eromanga Basin	Blocks: -	Sq km: 19	12/09/2024	
<i>Roti West</i>				
Australian Gasfields Ltd	2.00			
Delhi Petroleum Pty Ltd	32.00			
Drillsearch Energy Limited	2.00			
Inland Oil (Production) Pty Ltd	2.00			
Mawson Petroleum Pty Ltd	6.50			
Santos Ltd*	40.00			
Vamgas Pty Ltd	15.50			
PL182 Cooper/Eromanga Basin	Blocks: -	Sq km: 28	12/09/2024	
<i>Wippo East</i>				
Australian Gasfields Ltd	2.00			
Delhi Petroleum Pty Ltd	32.00			
Drillsearch Energy Limited	2.00			
Inland Oil (Production) Pty Ltd	2.00			
Mawson Petroleum Pty Ltd	6.50			
Santos Ltd*	40.00			
Vamgas Pty Ltd	15.50			
PL183 Bowen/Surat Basin	Blocks: -	Sq km: 19	12/09/2021	
<i>Punchbowl Gully</i>				
Origin Energy CSG Ltd*	50.00			
Santos QNT Pty Ltd	50.00			
PL184 Cooper/Eromanga Basin	Blocks: -	Sq km: 77	12/09/2021	
<i>Thylungga</i>				
Australian Gasfields Ltd	19.60			
Beach Petroleum Ltd*	69.59			
Inland Oil (Production) Pty Ltd	5.00			
Mawson Petroleum Pty Ltd	5.81			
PL186 Cooper/Eromanga Basin	Blocks: -	Sq km: 62	6/02/2026	
<i>Quasar South</i>				
Delhi Petroleum Pty Ltd	30.00			
Santos Ltd*	37.50			
Santos Petroleum Pty Ltd	25.00			
Vamgas Pty Ltd	7.50			

Title				
<i>Accumulation</i>				
Company (Operator*)	Equity	Expiry Date		
PL187 Cooper/Eromanga Basin	Blocks: -	Sq km: 34	6/03/2029	
Delhi Petroleum Pty Ltd	28.80			
Origin Energy Resources Ltd	10.00			
Santos Australian Hydrocarbons Pty Ltd	2.00			
Santos Ltd*	52.00			
Vamgas Pty Ltd	7.20			
PL188 Cooper/Eromanga Basin	Blocks: -	Sq km: 62	6/03/2028	
Delhi Petroleum Pty Ltd	28.80			
Origin Energy Resources Ltd	10.00			
Santos Australian Hydrocarbons Pty Ltd	2.00			
Santos Ltd*	52.00			
Vamgas Pty Ltd	7.20			
PL189 Cooper/Eromanga Basin	Blocks: -	Sq km: 19	6/03/2017	
Australian Gasfields Ltd	2.00			
Delhi Petroleum Pty Ltd	32.00			
Drillsearch Energy Limited	2.00			
Inland Oil (Production) Pty Ltd	2.00			
Mawson Petroleum Pty Ltd	6.50			
Santos Ltd*	40.00			
Vamgas Pty Ltd	15.50			
PL191 Bowen Basin	Blocks: -	Sq km: 220	20/03/2032	
BHP Coal Pty Ltd	50.00			
CH4 Pty Ltd*	50.00			
PL192 Bowen/Surat Basin	Blocks: -	Sq km: 92	7/11/2025	
Mosaic Oil QLD Pty Ltd*	49.00			
Santos (BOL) Pty Ltd	27.78			
Santos Exploration Pty Ltd	23.22			
PL193 Cooper/Eromanga Basin	Blocks: -	Sq km: 31	20/03/2015	
Delhi Petroleum Pty Ltd	30.00			
Santos Ltd*	37.50			
Santos Petroleum Pty Ltd	25.00			
Vamgas Pty Ltd	7.50			
PL194 Bowen Basin	Blocks: -	Sq km: 236	8/12/2034	
Australian Coalbed Methane Pty Ltd*	50.00			
CS Energy Limited	50.00			
PL195 Bowen/Surat Basin	Blocks: -	Sq km: 256	26/03/2037	
Origin Energy CSG Ltd*	100.00			
PL196 Bowen Basin	Blocks: -	Sq km: 39	15/12/2024	
CH4 Pty Ltd*	100.00			
PL198 Clarence/Moreton Basin	Blocks: -	Sq km: 259	8/12/2034	
Arrow Energy NL*	80.00			
Comet Ridge Limited	20.00			
PL200 Bowen/Surat Basin	Blocks: 2	Sq km: 154	2/06/2044	
Origin Energy CSG Ltd*	100.00			
PL201 Bowen/Surat Basin	Blocks: -	Sq km: 66	23/06/2039	
CS Energy Limited	50.00			
Queensland Gas Company Ltd*	50.00			
PL202 Surat Basin	Blocks: -	Sq km: 92	2/06/2025	
Mosaic Oil QLD Pty Ltd*	100.00			
PL203 Basin	Blocks: -	Sq km: 259	23/06/2054	
Origin Energy CSG Ltd*	100.00			
PL204 Bowen/Surat Basin	Blocks: -	Sq km: 219	18/12/2043	
Origin Energy CSG Ltd	50.00			
Origin Energy CSG Marketing Pty Ltd*	50.00			
PL205 Eromanga Basin	Blocks: -	Sq km: 30	14/04/2019	
Delhi Petroleum Pty Ltd	20.00			
Origin Energy Resources Ltd	25.00			
Santos Ltd*	25.00			
Santos Petroleum Pty Ltd	25.00			
Vamgas Pty Ltd	5.00			
PL207 Cooper Basin	Blocks: -	Sq km: 37	7/07/2016	
Delhi Petroleum Pty Ltd	20.00			
Origin Energy Resources Ltd	25.00			
Santos Ltd*	25.00			
Santos Petroleum Pty Ltd	25.00			
Vamgas Pty Ltd	5.00			
PL208 Cooper Basin	Blocks: -	Sq km: 91	7/07/2018	
Delhi Petroleum Pty Ltd	22.50			
Origin Energy Resources Ltd	25.00			
Santos Ltd*	28.12			
Santos Petroleum Pty Ltd	18.75			
Vamgas Pty Ltd	5.63			

KEY TO PETROLEUM EXPLORATION AND DEVELOPMENT TITLES

Title				
<i>Accumulation</i>				
Company (Operator*)		Equity		Expiry Date
PL209	Bowen/Surat Basin	Blocks: -	Sq km: 148	15/12/2054
Origin Energy CSG Ltd*				
			100.00	
PL219	Surat Basin	Blocks: -	Sq km: 141	15/12/2054
Origin Energy CSG Ltd*				
			100.00	
PL220	Surat Basin	Blocks: -	Sq km: 183	15/12/2054
Origin Energy CSG Ltd*				
			100.00	
PL223	Bowen Basin	Blocks: -	Sq km: 168	15/12/2024
CH4 Pty Ltd*				
			100.00	
PL226	Bowen/Surat Basin	Blocks: -	Sq km: 198	15/12/2054
Origin Energy CSG Ltd*				
			100.00	

Offshore

<i>Exploration Permit</i>				
			Sq km approximate	
Q/23P	Carpentaria Basin	Blocks: 180	Sq km: 62	20/05/2009
Gulf Energy Pty Ltd*				
			100.00	

New South Wales

Onshore

<i>Exploration Permit</i>				
			Sq km approximate	
PEL1	Gunnedah Basin	Blocks: 96	Sq km: 7,043	
Australian Coalbed Methane Pty Ltd*				
			100.00	
PEL2	Sydney Basin	Blocks: 108	Sq km: 8,100	
Sydney Gas Operations Pty Ltd*				
			100.00	
PEL4	Gunnedah Basin	Blocks: 96	Sq km: 6,955	10/11/2005
Pacific Power				
Sydney Gas Operations Pty Ltd*				
			100.00	
PEL5	Sydney Basin	Blocks: 30	Sq km: 2,026	10/11/2005
Sydney Gas Operations Pty Ltd*				
			100.00	
PEL6	Gunnedah Basin	Blocks: 82	Sq km: 5,867	8/12/2005
Eastern Energy Australia Pty Ltd*				
			100.00	
PEL8	Murray/Darling Basin	Blocks: 101	Sq km: 9,112	24/06/2007
Eastern Star Gas Ltd*				
			100.00	
PEL12	Gunnedah Basin	Blocks: 31	Sq km: 2,274	26/09/2007
Australian Coalbed Methane Pty Ltd*				
			100.00	
PEL13	Clarence/Moreton Basin	Blocks: 29	Sq km: 2,174	19/05/2006
Molopo Australia NL*				
			100.00	
PEL16	Clarence/Moreton Basin	Blocks: 11	Sq km: 826	12/11/2005
Metgasco Pty Ltd*				
			100.00	
PEL238	Gunnedah Basin	Blocks: 123	Sq km: 9,093	2/08/2007
Eastern Star Gas Ltd*				
			100.00	
PEL267	Sydney Basin	Blocks: 92	Sq km: 6,138	
Sydney Gas Operations Pty Ltd*				
			100.00	
PEL285	Sydney Basin	Blocks: 18	Sq km: 1,306	15/04/2005
Lucas Coal Seam Gas Pty Ltd*				
			100.00	
PEL419	Murray/Darling Basin	Blocks: 140	Sq km: 9,450	
Red Sky Exploration Pty Ltd*				
			100.00	
PEL420	Murray/Darling Basin	Blocks: 122	Sq km: 8,864	
Red Sky Exploration Pty Ltd*				
			100.00	
PEL422	Murray/Darling Basin	Blocks: 59	Sq km: 4,335	1/02/2010
Eastern Star Gas Ltd*				
			100.00	
PEL424	Murray/Darling Basin	Blocks: 82	Sq km: 5,892	
Eastern Star Gas Ltd*				
			100.00	
PEL426	Clarence/Moreton Basin	Blocks: 83	Sq km: 5,896	19/02/2006
Molopo Australia NL*				
			100.00	
PEL427 R1	Gunnedah Basin	Blocks: 97	Sq km: 6,829	20/05/2006
Comet Ridge Limited*				
			100.00	
PEL428 R1	Gunnedah Basin	Blocks: 108	Sq km: 7,816	14/09/2008
Comet Ridge Limited				
Davidson Prospecting				
			100.00	
PEL432	Clarence/Moreton Basin	Blocks: 6	Sq km: 234	21/12/2006
Arrow Energy NL*				
			100.00	
PEL433	Gunnedah Basin	Blocks: 140	Sq km: 10,216	13/02/2007
Eastern Star Gas Ltd*				
			100.00	
PEL434	Gunnedah Basin	Blocks: 140	Sq km: 10,108	13/02/2007
Eastern Star Gas Ltd*				
			100.00	
PEL435 R2	Murray/Darling Basin	Blocks: 140	Sq km: 10,108	18/03/2007
Australian Coalbed Methane Pty Ltd*				
			100.00	

Title				
<i>Accumulation</i>				
Company (Operator*)		Equity		Expiry Date
PEL437	Surat Basin	Blocks: 140	Sq km: 9,632	6/05/2007
Pangaea Oil and Gas Pty Ltd*				
			100.00	
PEL441	Sydney Basin	Blocks: 1	Sq km: 71	10/11/2005
Sydney Gas Operations Pty Ltd*				
			100.00	
PEL442	Sydney Basin	Blocks: 10	Sq km: 502	26/02/2008
Apex Energy NL*				
			100.00	
PEL443	Eromanga Basin	Blocks: 71	Sq km: 5,190	23/01/2009
Harlow Australia Pty Ltd*				
			100.00	
PEL444	Sydney Basin	Blocks: 5	Sq km: 65	3/04/2009
Apex Energy NL*				
Sun Resources NL				
			100.00	
PEL445	Clarence/Moreton Basin	Blocks: 124	Sq km: 9,103	18/04/2010
BNG Pty Ltd*				
			100.00	
PEL446	Sydney Basin	Blocks: 1	Sq km: 73	5/12/2010
Santelle Pty Ltd*				
			100.00	

Production Licence

<i>Production Licence</i>				
			Sq km approximate	
PPL1(NSW)	Sydney Basin	Blocks: -	Sq km: 47	9/01/2023
Sydney Gas (Camden) Operations Pty Ltd*				
			100.00	
PPL2(NSW)	Sydney Basin	Blocks: -	Sq km: 1	9/10/2023
Sydney Gas (Camden) Operations Pty Ltd*				
			100.00	
PPL3(NSW)	Gunnedah Basin	Blocks: -	Sq km: 26	14/12/2024
Narrabri Power Limited*				
			100.00	
PPL4(NSW)	Sydney Basin	Blocks: -	Sq km: 55	5/10/2025
Sydney Gas (Camden) Operations Pty Ltd*				
			100.00	

Offshore

<i>Exploration Permit</i>				
			Sq km approximate	
PEP11(NSW)	Sydney Basin	Blocks: 129	Sq km: 8,185	23/03/2007
Bounty Oil and Gas NL*				
			100.00	

Victoria

Onshore

<i>Exploration Permit</i>				
			Sq km approximate	
PEP151	Otway Basin	Blocks: -	Sq km: 1,718	15/05/2007
Essential Petroleum Resources Ltd*				
			100.00	
PEP152	Otway Basin	Blocks: -	Sq km: 755	
Essential Petroleum Resources Ltd*				
			84.41	
			15.59	
PEP153	Otway Basin	Blocks: -	Sq km: 1,061	
Origin Energy Resources Ltd*				
			100.00	
PEP154	Otway Basin	Blocks: 26	Sq km: 832	
<i>Black Watch</i>				
			10.00	
Beach Petroleum NL				
			90.00	
Santos (BOL) Pty Ltd*				
			100.00	
PEP155	Gippsland Basin	Blocks: -	Sq km: 1,578	16/08/2005
Petrotech Pty Ltd*				
			100.00	
PEP156	Gippsland Basin	Blocks: -	Sq km: 3,207	16/08/2005
Petrotech Pty Ltd*				
			100.00	
PEP157	Gippsland Basin	Blocks: -	Sq km: 1,889	16/08/2005
Petrotech Pty Ltd*				
			100.00	
PEP158	Gippsland Basin	Blocks: -	Sq km: 799	16/08/2005
Petrotech Pty Ltd*				
			100.00	
PEP159	Otway Basin	Blocks: -	Sq km: 2,280	11/03/2006
Essential Petroleum Resources Ltd				
			50.00	
Origin Energy Petroleum Pty Ltd*				
			50.00	
PEP160	Otway Basin	Blocks: -	Sq km: 3,660	13/11/2005
Origin Energy Petroleum Pty Ltd				
			40.00	
TMOG Exploration Pty Ltd*				
			60.00	
PEP161	Murray/Darling Basin	Blocks: -	Sq km: 2,923	18/02/2006
Knight Industries Pty Ltd*				
			100.00	
PEP162	Gippsland Basin	Blocks: -	Sq km: 2,950	13/05/2006
Karoon Gas Pty Ltd*				
			100.00	
PEP163	Otway Basin	Blocks: -	Sq km: 2,923	18/07/2007
Mirboo Ridge Pty Ltd*				
			100.00	
PEP164	Otway Basin	Blocks: -	Sq km: 2,827	9/10/2007
Mirboo Ridge Pty Ltd*				
			100.00	
PEP165	Murray/Darling Basin	Blocks: -	Sq km: 6,081	9/10/2007
Knight Industries Pty Ltd*				
			100.00	

KEY TO PETROLEUM EXPLORATION AND DEVELOPMENT TITLES

Title				
Accumulation				
Company (Operator*)	Equity	Expiry Date		
PEP166 Gippland Basin	Blocks: - Sq km: 3,551	2/01/2008		
Ausam Resources NL	50.00			
Petrotech Pty Ltd*	50.00			
Production Licence Sq km approximate				
PPL1 Otway Basin	Blocks: - Sq km: 7			
<i>Dunbar, Grumby, Langley, North Paaratte, Port Campbell 1, Port Campbell 3, Port Campbell 4, Vaughan, Wallaby Creek</i>				
TXU Gas Storage Pty Ltd*	100.00			
PPL2 Otway Basin	Blocks: - Sq km: 8			
<i>Iona</i>				
TXU Gas Storage Pty Ltd*	100.00			
PPL3 Otway Basin	Blocks: - Sq km: 2			
Boggy Creek Pty Ltd*	100.00			
PPL4 Otway Basin	Blocks: - Sq km: 6			
Origin Energy Resources Ltd*	100.00			
PPL5 Otway Basin	Blocks: - Sq km: 6			
Origin Energy Resources Ltd*	100.00			
PPL6 Otway Basin	Blocks: - Sq km: 4			
Beach Petroleum Ltd	10.00			
Origin Energy Resources Ltd*	90.00			
PPL7 Otway Basin	Blocks: - Sq km: 2			
Origin Energy Resources Ltd*	100.00			
PPL8 Otway Basin	Blocks: - Sq km: 69			
Origin Energy Petroleum Pty Ltd*	100.00			
PPL9 Otway Basin	Blocks: - Sq km: 1			
Beach Petroleum Ltd	10.00			
Origin Energy Resources Ltd*	90.00			
PPL10 Otway Basin	Blocks: - Sq km: 7	1/09/2023		
<i>Croft, Naylor</i>				
Beach Petroleum Ltd	10.00			
Origin Energy Resources Ltd*	90.00			
PPL11 Otway Basin	Blocks: - Sq km: 3			
Beach Petroleum Ltd	10.00			
Origin Energy Resources Ltd*	90.00			
PPL12 Otway Basin	Blocks: - Sq km: 3			
Origin Energy Resources Ltd*	100.00			
Retention Lease Sq km approximate				
PRL1 Otway Basin	Blocks: - Sq km: 5	27/09/2017		
Beach Petroleum Ltd	10.00			
Origin Energy Resources Ltd*	90.00			
Offshore				
Exploration Permit Sq km approximate				
VIC/P41 Gippsland Basin	Blocks: 32 Sq km: 2,160	13/02/2006		
Bass Strait Oil Company Pty Ltd	45.00			
Eagle Bay Resources NL*	25.00			
Moby Oil and Gas Ltd	30.00			
VIC/P42 Gippsland Basin	Blocks: 28 Sq km: 1,890	13/02/2008		
<i>Nannygai, Omeo</i>				
Bass Strait Oil Company Pty Ltd*	50.00			
Impex Alpha Ltd	50.00			
VIC/P43 Otway Basin	Blocks: 54 Sq km: 3,645	10/08/2005		
Benaris International NV	12.70			
CalEnergy Gas (Australia) Ltd	6.00			
Origin Energy Resources Ltd*	29.75			
Woodside Energy Ltd	51.55			
VIC/P44 Otway Basin	Blocks: 42 Sq km: 3,037	10/08/2005		
<i>Henry, Martha, Pecten</i>				
Mittwell Energy Resources Pty Ltd	25.00			
Peedamullah Petroleum Pty Ltd	25.00			
Santos Ltd*	50.00			
VIC/P45 Gippsland Basin	Blocks: 13 Sq km: 877	15/05/2006		
<i>Anemone, Archer, Hermes</i>				
BHP Billiton Petroleum (Victoria) Pty Ltd*	60.00			
Impex Alpha Ltd	40.00			
VIC/P46 Otway Basin	Blocks: 35 Sq km: 1,864	27/05/2007		
Essential Petroleum Resources Ltd*	100.00			
VIC/P47 Gippsland Basin	Blocks: 12 Sq km: 742	27/05/2007		
<i>Flathead, Moby</i>				
Bass Strait Oil Company Pty Ltd	45.00			
Eagle Bay Resources NL*	25.00			
Moby Oil and Gas Ltd	30.00			
VIC/P49 Gippsland Basin	Blocks: 35 Sq km: 2,375	15/10/2007		
Nexus Energy Australia NL*	100.00			
VIC/P50 Otway Basin	Blocks: 58 Sq km: 3,657	16/09/2008		
Essential Petroleum Resources Ltd*	100.00			

Title				
Accumulation				
Company (Operator*)	Equity	Expiry Date		
VIC/P51 Otway Basin	Blocks: 46 Sq km: 3,106	26/08/2008		
Impex Alpha Ltd	20.00			
Santos Ltd*	80.00			
VIC/P52 Otway Basin	Blocks: 87 Sq km: 5,503	26/08/2008		
Impex Alpha Ltd	33.33			
Santos Ltd*	33.33			
Unocal South Asean Ltd	33.33			
VIC/P53 Gippsland Basin	Blocks: 11 Sq km: 803	15/10/2009		
<i>Veilinn</i>				
Cue Petroleum Pty Ltd*	100.00			
VIC/P54 Gippsland Basin	Blocks: 11 Sq km: 803	7/04/2009		
<i>Grayling, Longtom</i>				
Apache Energy Limited*				
Apache Northwest Pty Ltd				
Nexus Energy Vic/P54 Pty Ltd				
VIC/P55 Gippsland Basin	Blocks: 10 Sq km: 735	14/09/2009		
<i>Leatherjacket</i>				
Basin Oil NL*	33.33			
Diamond Gas Resources Pty Ltd	33.33			
Santos Offshore Pty Ltd	33.33			
VIC/P56 Gippsland Basin	Blocks: 2 Sq km: 148	27/08/2009		
<i>Bignose</i>				
Nexus Energy Australia NL*	100.00			
VIC/P57 Gippsland Basin	Blocks: 18 Sq km: 1,332	18/04/2010		
<i>West Seahorse</i>				
3D Oil PL*	100.00			
VIC/P58 Gippsland Basin	Blocks: 46 Sq km: 3,312	30/08/2010		
Apache Northwest Pty Ltd*	100.00			
VIC/P59 Gippsland Basin	Blocks: 18 Sq km: 1,340	12/10/2010		
<i>Angler</i>				
Sita Oil Exploration House Inc*	100.00			
VIC/P60 Gippsland Basin	Blocks: 24 Sq km: 1,787	28/10/2010		
Australian-Canadian Oil Royalties Ltd*	25.00			
Ely Sakhai	25.00			
Holloman Corp	25.00			
Robert Thorpe	25.00			
VIC/P61 Otway Basin	Blocks: 30 Sq km: 2,280	7/02/2011		
Exoil Ltd*	30.00			
Gascorp Australia Ltd	30.00			
Otway Oil and Gas Pty Ltd	20.00			
Southern Energy Pty Ltd	20.00			
VIC/P37(V) Otway Basin	Blocks: 21 Sq km: 515	16/04/2009		
<i>Halladale</i>				
Origin Energy Resources Ltd*	37.50			
Woodside Energy Ltd	62.50			
VIC/P38(V) Otway Basin	Blocks: 14 Sq km: 368	11/05/2009		
Benaris International NV*	100.00			
VIC/P39(V) Gippsland Basin	Blocks: 14 Sq km: 368	19/04/2010		
Nexus Energy Australia NL*	100.00			
VIC/P40(V) Gippsland Basin	Blocks: 18 Sq km: 441	19/04/2010		
Petrotech Pty Ltd*	100.00			
Production Licence Sq km approximate				
VIC/L1 R1 Gippsland Basin	Blocks: 4 Sq km: 259	24/08/2009		
<i>Barraouta, Tarwhine, Whiptail</i>				
BHP Billiton Petroleum (Bass Strait) Pty Ltd	50.00			
Eso Australia Resources Pty Ltd*	50.00			
VIC/L2 R1 Gippsland Basin	Blocks: 5 Sq km: 324	24/08/2009		
<i>Barraouta, Whiting, Wirrah</i>				
BHP Billiton Petroleum (Bass Strait) Pty Ltd	50.00			
Eso Australia Resources Pty Ltd*	50.00			
VIC/L3 R1 Gippsland Basin	Blocks: 5 Sq km: 324	24/08/2009		
<i>Marlin</i>				
BHP Billiton Petroleum (Bass Strait) Pty Ltd	50.00			
Eso Australia Resources Pty Ltd*	50.00			
VIC/L4 R1 Gippsland Basin	Blocks: 4 Sq km: 259	24/08/2009		
<i>Angelfish, Battfish, Flounder, Marlin, Tuna</i>				
BHP Billiton Petroleum (Bass Strait) Pty Ltd	50.00			
Eso Australia Resources Pty Ltd*	50.00			
VIC/L5 R1 Gippsland Basin	Blocks: 5 Sq km: 324	19/09/2010		
<i>Flounder, Halibut, Mackerel, Yellowtail</i>				
BHP Billiton Petroleum (Bass Strait) Pty Ltd	50.00			
Eso Australia Resources Pty Ltd*	50.00			
VIC/L6 R1 Gippsland Basin	Blocks: 4 Sq km: 259	19/09/2010		
<i>Flounder, Cudgong, Mackerel</i>				
BHP Billiton Petroleum (Bass Strait) Pty Ltd	50.00			
Eso Australia Resources Pty Ltd*	50.00			
VIC/L7 R1 Gippsland Basin	Blocks: 5 Sq km: 324	19/09/2010		
<i>Kingfish</i>				
BHP Billiton Petroleum (Bass Strait) Pty Ltd	50.00			
Eso Australia Resources Pty Ltd*	50.00			

KEY TO PETROLEUM EXPLORATION AND DEVELOPMENT TITLES

Title				
Accumulation				
Company (Operator*)		Equity	Expiry Date	
VIC/L8 R1	Gippsland Basin	Blocks: 4	Sq km: 259	19/09/2010
<i>Kingfish</i>				
BHP Billiton Petroleum (Bass Strait) Pty Ltd		50.00		
Esso Australia Resources Pty Ltd*		50.00		
VIC/L9 R1	Gippsland Basin	Blocks: 4	Sq km: 259	12/07/2016
<i>East Pilchard, Kipper, Tuna</i>				
BHP Billiton Petroleum (Bass Strait) Pty Ltd		50.00		
Esso Australia Resources Pty Ltd*		50.00		
VIC/L10 R1	Gippsland Basin	Blocks: 4	Sq km: 259	28/05/2018
<i>Emperor, Moonfish, Snapper, Sweetlips</i>				
BHP Billiton Petroleum (Bass Strait) Pty Ltd		50.00		
Esso Australia Resources Pty Ltd*		50.00		
VIC/L11 R1	Gippsland Basin	Blocks: 2	Sq km: 130	28/05/2018
<i>Flounder, Grunter</i>				
BHP Billiton Petroleum (Bass Strait) Pty Ltd		50.00		
Esso Australia Resources Pty Ltd*		50.00		
VIC/L13	Gippsland Basin	Blocks: 3	Sq km: 202	15/12/2006
<i>Bream, Luderick</i>				
BHP Billiton Petroleum (Bass Strait) Pty Ltd		50.00		
Esso Australia Resources Pty Ltd*		50.00		
VIC/L14	Gippsland Basin	Blocks: 3	Sq km: 202	15/12/2006
<i>Bream</i>				
BHP Billiton Petroleum (Bass Strait) Pty Ltd		50.00		
Esso Australia Resources Pty Ltd*		50.00		
VIC/L15	Gippsland Basin	Blocks: 2	Sq km: 130	13/06/2010
<i>Dolphin</i>				
BHP Billiton Petroleum (Bass Strait) Pty Ltd		50.00		
Esso Australia Resources Pty Ltd*		50.00		
VIC/L16	Gippsland Basin	Blocks: 2	Sq km: 130	13/06/2010
<i>Torsk</i>				
BHP Billiton Petroleum (Bass Strait) Pty Ltd		50.00		
Esso Australia Resources Pty Ltd*		50.00		
VIC/L17	Gippsland Basin	Blocks: 1	Sq km: 65	13/06/2010
<i>Perch</i>				
BHP Billiton Petroleum (Bass Strait) Pty Ltd		50.00		
Esso Australia Resources Pty Ltd*		50.00		
VIC/L18	Gippsland Basin	Blocks: 2	Sq km: 130	13/06/2010
<i>Seahorse</i>				
BHP Billiton Petroleum (Bass Strait) Pty Ltd		50.00		
Esso Australia Resources Pty Ltd*		50.00		
VIC/L19	Gippsland Basin	Blocks: 1	Sq km: 65	12/07/2016
<i>Halibut, Perch</i>				
BHP Billiton Petroleum (Bass Strait) Pty Ltd		50.00		
Esso Australia Resources Pty Ltd*		50.00		
VIC/L20	Gippsland Basin	Blocks: 3	Sq km: 195	1/01/2019
<i>Blackback, Volador</i>				
BHP Billiton Petroleum (Bass Strait) Pty Ltd		50.00		
Esso Australia Resources Pty Ltd*		50.00		
VIC/L21	Gippsland Basin	Blocks: 2	Sq km: 137	26/12/2022
<i>Patricia/Baleen, Sperm Whale</i>				
Basin Oil Pty Ltd*		55.00		
OMV (Timor Sea) Pty Ltd		5.00		
Trinity Gas Resources Pty Ltd		40.00		
VIC/L22	Otway Basin	Blocks: 1	Sq km: 61	31/10/2023
<i>Minerva</i>				
BHP Billiton Petroleum (Victoria) Pty Ltd*		90.00		
Santos (BOL) Pty Ltd		10.00		
VIC/L23	Otway Basin	Blocks: 2	Sq km: 131	23/06/2025
<i>Geographe</i>				
Benaris International NV		12.70		
CalEnergy Gas (Australia) Ltd		6.00		
Origin Energy Resources Ltd		29.75		
Woodside Energy Ltd*		51.55		
Sq km approximate				
Retention Lease				
VIC/RL1 R1	Gippsland Basin	Blocks: 1	Sq km: 67	13/04/2005
<i>Golden Beach, Mulloway</i>				
BHP Billiton Petroleum (Victoria) Pty Ltd		50.00		
Esso Australia Resources Pty Ltd*		50.00		
VIC/RL2 R1	Gippsland Basin	Blocks: 1	Sq km: 67	
<i>Kipper, Scallop</i>				
BHP Billiton Petroleum (Victoria) Pty Ltd		25.00		
Crusader (Victoria) Pty Ltd		12.95		
Esso Australia Resources Pty Ltd*		25.00		
Santos Offshore Pty Ltd		7.05		
Woodside Eastern Energy Pty Ltd		30.00		
VIC/RL3 R1	Gippsland Basin	Blocks: 3	Sq km: 202	13/05/2005
<i>Sole</i>				
Basin Oil Pty Ltd*		35.00		
Santos Ltd		35.00		
Trinity Gas Resources Pty Ltd		30.00		
VIC/RL4 R1	Gippsland Basin	Blocks: 1	Sq km: 67	27/02/2006
<i>Remora, Sunfish</i>				
BHP Billiton Petroleum (Bass Strait) Pty Ltd		50.00		
Esso Australia Resources Pty Ltd*		50.00		

Title				
Accumulation				
Company (Operator*)		Equity	Expiry Date	
VIC/RL6	Gippsland Basin	Blocks: 1	Sq km: 68	29/10/2005
<i>Basker, Gummy, Manta</i>				
Anzon Australia Ltd*		75.00		
Beach Petroleum Ltd		25.00		
VIC/RL7 R1	Otway Basin	Blocks: 3	Sq km: 202	19/12/2008
<i>La Bella</i>				
BHP Billiton Petroleum (Victoria) Pty Ltd*		90.00		
Santos (BOL) Pty Ltd		10.00		
VIC/RL9	Gippsland Basin	Blocks: 1	Sq km: 68	21/03/2006
<i>Manta</i>				
Anzon Energy Australia Ltd*		75.00		
Beach Petroleum Ltd		25.00		
VIC/RL10	Gippsland Basin	Blocks: 1	Sq km: 68	21/03/2006
<i>Gummy</i>				
Anzon Australia Ltd*		75.00		
Beach Petroleum Ltd		25.00		
VIC/RL1(V)	Gippsland Basin	Blocks: 4	Sq km: 90	27/08/2007
<i>Golden Beach</i>				
Basin Oil Pty Ltd		33.33		
Santos Offshore Pty Ltd*		66.67		

Tasmania

Onshore

Exploration Permit

Company (Operator*)	Equity	Expiry Date
EL13/96 R1	Tasmania Basin	Blocks: -
Sq km approximate		
Great Southland Minerals Pty Ltd*	15,039	30/09/2009
	100.00	

Offshore

Exploration Permit

Company (Operator*)	Equity	Expiry Date
Sq km approximate		
T/18P R3	Bass Basin	Blocks: 16
Sq km: 1,080		
<i>Aroo, Bass, Cormorant, Trefoil, White Ibis</i>		
AWE Petroleum Pty Ltd	22.60	
CalEnergy Gas (Australia) Ltd	23.50	
Origin Energy Resources Ltd*	41.40	
Wandoo Petroleum Pty Ltd	12.50	
T/30P R1	Otway Basin	Blocks: 52
Sq km: 3,408		10/12/2008
Benaris International NV	12.70	
CalEnergy Gas (Australia) Ltd	6.00	
Origin Energy Resources Ltd	29.75	
Woodside Energy Ltd*	51.55	
T/32P	Sorell Basin	Blocks: 79
Sq km: 5,155		21/08/2008
Santos Offshore Pty Ltd*	50.00	
Unocal South Asean Ltd	50.00	
T/33P	Sorell Basin	Blocks: 77
Sq km: 4,975		21/08/2008
Impex Alpha Ltd	20.00	
Santos Offshore Pty Ltd*	80.00	
T/34P	Otway Basin	Blocks: 60
Sq km: 3,289		16/07/2009
Benaris International NV	12.70	
CalEnergy Gas (Australia) Ltd	6.00	
Origin Energy Resources Ltd	29.75	
Woodside Energy Ltd*	57.55	
T/35P	Otway Basin	Blocks: 50
Sq km: 3,335		29/07/2009
Santos Offshore Pty Ltd*	50.00	
Unocal South Australia Ltd	50.00	
T/36P	Sorell Basin	Blocks: 82
Sq km: 5,286		26/11/2009
Santos Offshore Pty Ltd*	50.00	
Unocal South Australia Ltd	50.00	
T/37P	Bass Basin	Blocks: 40
Sq km: 2,633		8/12/2010
Exoil Ltd	50.00	
Galveston Mining Corporation Pty Ltd*	50.00	
T/38P	Bass Basin	Blocks: 40
Sq km: 2,622		8/12/2010
Exoil Ltd	50.00	
Galveston Mining Corporation Pty Ltd*	50.00	
T/39P	Bass Basin	Blocks: 40
Sq km: 2,622		5/12/2010
Benaris International NV*	100.00	
Sq km approximate		
Production Licence		
T/L1	Bass Basin	Blocks: 4
Sq km: 265		16/04/2024
<i>Yolla</i>		
AWE Petroleum Pty Ltd	30.00	
CalEnergy Gas (Australia) Ltd	20.00	
Origin Energy Northwest Ltd	5.00	
Origin Energy Resources Ltd*	32.50	
Wandoo Petroleum Pty Ltd	12.50	
T/L2	Otway Basin	Blocks: 2
Sq km: 133		30/06/2025
<i>Thylacine</i>		
Benaris International NV	12.70	
CalEnergy Gas (Australia) Ltd	6.00	
Origin Energy Resources Ltd	29.75	
Woodside Energy Ltd*	51.55	

KEY TO PETROLEUM EXPLORATION AND DEVELOPMENT TITLES

Title				
Accumulation				
Company (Operator*)		Equity		Expiry Date
Retention Lease		Sq km approximate		
T/RL1 R2	Bass Basin	Blocks: 5	Sq km: 331	15/10/2006
AWE Petroleum Pty Ltd			37.50	
Boral Energy Northwest Ltd			5.00	
CalEnergy Gas (Australia) Ltd			20.00	
Origin Energy Resources Ltd*			32.50	
Santos Ltd			5.00	
South Australia				
Onshore				
Exploration Permit		Sq km approximate		
PEL 27	Otway Basin	Blocks: -	Sq km: 240	31/01/2006
<i>Sawpit</i>				
Origin Energy CSG Ltd			67.00	
Origin Energy Resources Ltd*			33.00	
PEL 57	Otway Basin	Blocks: -	Sq km: 408	17/11/2006
Lakes Oil NL*			80.00	
Mirboo Ridge Pty Ltd			10.00	
Victoria Petroleum NL			10.00	
PEL 66	Otway Basin	Blocks: -	Sq km: 376	17/06/2006
<i>Kalangadoo</i>				
Lakes Oil NL*			100.00	
PEL 72	Otway Basin	Blocks: -	Sq km: 504	25/01/2008
Beach Petroleum Ltd			50.00	
Essential Petroleum Resources Ltd*			50.00	
PEL 73	Stansbury Basin	Blocks: 20	Sq km: 625	26/06/2006
David M. Schuette*			100.00	
PEL 82	Otway Basin	Blocks: -	Sq km: 275	21/03/2007
Meridian Resources Pty Ltd*			100.00	
PEL 86	Cooper/Eromanga Basin	Blocks: -	Sq km: 4,316	7/01/2007
Entek Energy Limited			12.50	
Permian Oil Pty Ltd			20.00	
Springfield Oil & Gas Ltd			15.00	
Tacnas Pty Ltd			12.50	
Victoria Oil Exploration (1977) Pty Ltd*			40.00	
PEL 87	Cooper/Eromanga Basin	Blocks: -	Sq km: 4,315	7/01/2007
Entek Energy Limited			12.50	
Permian Oil Pty Ltd			20.00	
Springfield Oil & Gas Ltd			15.00	
Tacnas Pty Ltd			12.50	
Victoria Oil Exploration (1977) Pty Ltd*			40.00	
PEL 88	Cooper/Eromanga Basin	Blocks: -	Sq km: 4,987	15/05/2007
Cooper Energy NL*			30.00	
Liberty Petroleum Corporation			50.00	
Traditional Oil Exploration NL			10.00	
Victoria Oil Exploration (1977) Pty Ltd			10.00	
PEL 89	Cooper/Eromanga Basin	Blocks: -	Sq km: 4,891	7/01/2008
Entek Energy Limited			12.50	
Permian Oil Pty Ltd			20.00	
Springfield Oil & Gas Ltd			15.00	
Tacnas Pty Ltd			12.50	
Victoria Oil Exploration (1977) Pty Ltd*			40.00	
PEL 90	Cooper/Eromanga Basin	Blocks: -	Sq km: 1,365	29/10/2006
Stuart Petroleum Ltd*			100.00	
PEL 91	Cooper/Eromanga Basin	Blocks: -	Sq km: 2,964	7/01/2007
Beach Petroleum Ltd*			40.00	
Great Artesian Oil and Gas Ltd			60.00	
PEL 92	Cooper/Eromanga Basin	Blocks: -	Sq km: 2,868	4/11/2006
Beach Petroleum Ltd*			75.00	
Cooper Energy NL			25.00	
PEL 93	Cooper/Eromanga Basin	Blocks: -	Sq km: 1,884	4/11/2006
Cooper Energy NL			30.00	
Stuart Petroleum Ltd*			70.00	
PEL 94	Cooper/Eromanga Basin	Blocks: -	Sq km: 2,703	4/11/2006
Beach Petroleum Ltd*			50.00	
Magellan Petroleum (NT) Pty Ltd			50.00	
PEL 95	Cooper/Eromanga Basin	Blocks: -	Sq km: 3,893	29/10/2006
Beach Petroleum Ltd*			50.00	
Magellan Petroleum (NT) Pty Ltd			50.00	
PEL 100	Cooper/Eromanga Basin	Blocks: -	Sq km: 594	5/03/2008
Cooper Energy NL*			0.00	
Liberty Petroleum Corporation			95.00	
Traditional Oil Exploration NL			5.00	

Title				
Accumulation				
Company (Operator*)		Equity		Expiry Date
PEL 101	Cooper/Eromanga Basin	Blocks: -	Sq km: 617	29/07/2008
Innaminka Petroleum*			50.00	
Vernon E Faulconer Australia Inc			50.00	
PEL 102	Cooper/Eromanga Basin	Blocks: -	Sq km: 650	23/10/2007
Stuart Petroleum Ltd*			100.00	
PEL 103	Cooper/Eromanga Basin	Blocks: -	Sq km: 767	29/01/2008
Innaminka Petroleum*			35.00	
Vernon E Faulconer Australia Inc			65.00	
PEL 104	Cooper/Eromanga Basin	Blocks: -	Sq km: 1,065	27/03/2008
Entek Energy Limited			12.50	
Permian Oil Pty Ltd			20.00	
Springfield Oil & Gas Ltd			15.00	
Tacnas Pty Ltd			12.50	
Victoria Oil Exploration (1977) Pty Ltd*			40.00	
PEL 105	Cooper/Eromanga Basin	Blocks: -	Sq km: 437	23/04/2008
Hughes and Hughes Australia Pty Ltd*			66.70	
Tri-C Resources Inc.			33.30	
PEL 106	Cooper/Eromanga Basin	Blocks: -	Sq km: 1,007	8/04/2008
Great Artesian Oil and Gas Ltd*			100.00	
PEL 107	Cooper/Eromanga Basin	Blocks: -	Sq km: 814	1/04/2008
Beach Petroleum Ltd*			40.00	
Great Artesian Oil and Gas Ltd			60.00	
PEL 108	Cooper/Eromanga Basin	Blocks: -	Sq km: 2,047	16/04/2008
Australian-Canadian Oil Royalties Ltd*			50.00	
Ely Sakhai			50.00	
PEL 109	Cooper/Eromanga Basin	Blocks: -	Sq km: 1,515	16/04/2008
Australian-Canadian Oil Royalties Ltd*			50.00	
Ely Sakhai			50.00	
PEL 110	Cooper/Eromanga Basin	Blocks: -	Sq km: 1,458	4/02/2008
Beach Petroleum Ltd*			37.50	
Cooper Energy NL			25.00	
Magellan Petroleum (Southern) Pty Ltd			37.50	
PEL 111	Cooper/Eromanga Basin	Blocks: -	Sq km: 1,174	15/05/2008
Entek Energy Limited			12.50	
Permian Oil Pty Ltd			20.00	
Springfield Oil & Gas Ltd			15.00	
Tacnas Pty Ltd			12.50	
Victoria Oil Exploration (1977) Pty Ltd*			40.00	
PEL 112	Cooper/Eromanga Basin	Blocks: -	Sq km: 3,326	16/04/2008
Australian-Canadian Oil Royalties Ltd*			50.00	
Ely Sakhai			50.00	
PEL 113	Cooper/Eromanga Basin	Blocks: -	Sq km: 1,163	30/04/2008
Stuart Petroleum Ltd*			100.00	
PEL 114	Cooper/Eromanga Basin	Blocks: -	Sq km: 958	21/07/2008
Santos Ltd*			100.00	
PEL 115	Cooper/Eromanga Basin	Blocks: -	Sq km: 1,106	15/05/2008
Entek Energy Limited			12.50	
Permian Oil Pty Ltd			20.00	
Springfield Oil & Gas Ltd			15.00	
Tacnas Pty Ltd			12.50	
Victoria Oil Exploration (1977) Pty Ltd*			40.00	
PEL 136	Otway Basin	Blocks: -	Sq km: 3,371	7/05/2008
Beach Petroleum Ltd*			100.00	
PEL 154	Otway Basin	Blocks: -	Sq km: 1,404	29/07/2008
Rawson Resources NL*			100.00	
PEL 155	Otway Basin	Blocks: -	Sq km: 905	29/07/2008
Rawson Resources NL*			100.00	
PEL 186	Otway Basin	Blocks: -	Sq km: 1,421	27/01/2010
Neo Oil Pty Ltd			100.00	
PEL 187	Otway Basin	Blocks: -	Sq km: 268	27/01/2010
Neo Oil Pty Ltd*			100.00	

KEY TO PETROLEUM EXPLORATION AND DEVELOPMENT TITLES

Title				
<i>Accumulation</i>				
Company (Operator*)	Equity	Expiry Date		
<i>Production Licence</i>	Sq km approximate			
PPL 6 Cooper/Eromanga Basin	Blocks: - Sq km: 257	31/12/2005		
<i>Gidgalpa, Mawson, McIntee, Tregony</i>				
Alliance Petroleum Australia Pty Ltd	3.97			
Basin Oil Pty Ltd	2.10			
Bridge Oil Developments Pty Ltd	3.99			
Delhi Petroleum Pty Ltd	20.21			
Novus Australia Resources NL	4.75			
Origin Energy Resources Ltd	13.19			
Reef Oil Pty Ltd	1.97			
Santos (BOL) Pty Ltd	0.21			
Santos Ltd*	40.70			
Santos Petroleum Pty Ltd	0.40			
Vamgas Pty Ltd	8.51			
PPL 7 Cooper/Eromanga Basin	Blocks: - Sq km: 254	31/12/2005		
<i>Moomba</i>				
Alliance Petroleum Australia Pty Ltd	3.97			
Basin Oil Pty Ltd	2.10			
Bridge Oil Developments Pty Ltd	3.99			
Delhi Petroleum Pty Ltd	20.21			
Novus Australia Resources NL	4.75			
Origin Energy Resources Ltd	13.19			
Reef Oil Pty Ltd	1.97			
Santos (BOL) Pty Ltd	0.21			
Santos Ltd*	40.70			
Santos Petroleum Pty Ltd	0.40			
Vamgas Pty Ltd	8.51			
PPL 8 Cooper/Eromanga Basin	Blocks: - Sq km: 254	31/12/2005		
<i>Dunbar, Moomba</i>				
Alliance Petroleum Australia Pty Ltd	3.97			
Basin Oil Pty Ltd	2.10			
Bridge Oil Developments Pty Ltd	3.99			
Delhi Petroleum Pty Ltd	20.21			
Novus Australia Resources NL	4.75			
Origin Energy Resources Ltd	13.19			
Reef Oil Pty Ltd	1.97			
Santos (BOL) Pty Ltd	0.21			
Santos Ltd*	40.70			
Santos Petroleum Pty Ltd	0.40			
Vamgas Pty Ltd	8.51			
PPL 9 Cooper/Eromanga Basin	Blocks: - Sq km: 133	31/12/2005		
<i>Lavers, Moomba</i>				
Alliance Petroleum Australia Pty Ltd	3.97			
Basin Oil Pty Ltd	2.10			
Bridge Oil Developments Pty Ltd	3.99			
Delhi Petroleum Pty Ltd	20.21			
Novus Australia Resources NL	4.75			
Origin Energy Resources Ltd	13.19			
Reef Oil Pty Ltd	1.97			
Santos (BOL) Pty Ltd	0.21			
Santos Ltd*	40.70			
Santos Petroleum Pty Ltd	0.40			
Vamgas Pty Ltd	8.51			
PPL 10 Cooper/Eromanga Basin	Blocks: - Sq km: 226	31/12/2005		
<i>Cowan, Daralingie, Deina, Yapeni</i>				
Alliance Petroleum Australia Pty Ltd	3.97			
Basin Oil Pty Ltd	2.10			
Bridge Oil Developments Pty Ltd	3.99			
Delhi Petroleum Pty Ltd	20.21			
Novus Australia Resources NL	4.75			
Origin Energy Resources Ltd	13.19			
Reef Oil Pty Ltd	1.97			
Santos (BOL) Pty Ltd	0.21			
Santos Ltd*	40.70			
Santos Petroleum Pty Ltd	0.40			
Vamgas Pty Ltd	8.51			
PPL 11 Cooper/Eromanga Basin	Blocks: - Sq km: 160	31/12/2005		
<i>Big Lake</i>				
Alliance Petroleum Australia Pty Ltd	3.97			
Basin Oil Pty Ltd	2.10			
Bridge Oil Developments Pty Ltd	3.99			
Delhi Petroleum Pty Ltd	20.21			
Novus Australia Resources NL	4.75			
Origin Energy Resources Ltd	13.19			
Reef Oil Pty Ltd	1.97			
Santos (BOL) Pty Ltd	0.21			
Santos Ltd*	40.70			
Santos Petroleum Pty Ltd	0.40			
Vamgas Pty Ltd	8.51			

Title				
<i>Accumulation</i>				
Company (Operator*)	Equity	Expiry Date		
PPL 12 Cooper/Eromanga Basin	Blocks: - Sq km: 157	31/12/2005		
<i>Burke, Dullingari, Dullingari North</i>				
Alliance Petroleum Australia Pty Ltd	3.97			
Basin Oil Pty Ltd	2.10			
Bridge Oil Developments Pty Ltd	3.99			
Delhi Petroleum Pty Ltd	20.21			
Novus Australia Resources NL	4.75			
Origin Energy Resources Ltd	13.19			
Reef Oil Pty Ltd	1.97			
Santos (BOL) Pty Ltd	0.21			
Santos Ltd*	40.70			
Santos Petroleum Pty Ltd	0.40			
Vamgas Pty Ltd	8.51			
PPL 13 Cooper/Eromanga Basin	Blocks: - Sq km: 56	31/12/2005		
<i>Anyema, Brumby, Marsilea</i>				
Alliance Petroleum Australia Pty Ltd	3.97			
Basin Oil Pty Ltd	2.10			
Bridge Oil Developments Pty Ltd	3.99			
Delhi Petroleum Pty Ltd	20.21			
Novus Australia Resources NL	4.75			
Origin Energy Resources Ltd	13.19			
Reef Oil Pty Ltd	1.97			
Santos (BOL) Pty Ltd	0.21			
Santos Ltd*	40.70			
Santos Petroleum Pty Ltd	0.40			
Vamgas Pty Ltd	8.51			
PPL 14 Cooper/Eromanga Basin	Blocks: - Sq km: 233	31/12/2005		
<i>Toolachee</i>				
Alliance Petroleum Australia Pty Ltd	3.97			
Basin Oil Pty Ltd	2.10			
Bridge Oil Developments Pty Ltd	3.99			
Delhi Petroleum Pty Ltd	20.21			
Novus Australia Resources NL	4.75			
Origin Energy Resources Ltd	13.19			
Reef Oil Pty Ltd	1.97			
Santos (BOL) Pty Ltd	0.21			
Santos Ltd*	40.70			
Santos Petroleum Pty Ltd	0.40			
Vamgas Pty Ltd	8.51			
PPL 15 Cooper/Eromanga Basin	Blocks: - Sq km: 154	31/12/2005		
<i>Della</i>				
Alliance Petroleum Australia Pty Ltd	3.97			
Basin Oil Pty Ltd	2.10			
Bridge Oil Developments Pty Ltd	3.99			
Delhi Petroleum Pty Ltd	20.21			
Novus Australia Resources NL	4.75			
Origin Energy Resources Ltd	13.19			
Reef Oil Pty Ltd	1.97			
Santos (BOL) Pty Ltd	0.21			
Santos Ltd*	40.70			
Santos Petroleum Pty Ltd	0.40			
Vamgas Pty Ltd	8.51			
PPL 16 Cooper/Eromanga Basin	Blocks: - Sq km: 127	31/12/2005		
<i>Big Lake, Namur</i>				
Alliance Petroleum Australia Pty Ltd	3.97			
Basin Oil Pty Ltd	2.10			
Bridge Oil Developments Pty Ltd	3.99			
Delhi Petroleum Pty Ltd	20.21			
Novus Australia Resources NL	4.75			
Origin Energy Resources Ltd	13.19			
Reef Oil Pty Ltd	1.97			
Santos (BOL) Pty Ltd	0.21			
Santos Ltd*	40.70			
Santos Petroleum Pty Ltd	0.40			
Vamgas Pty Ltd	8.51			
PPL 17 Cooper/Eromanga Basin	Blocks: - Sq km: 141	31/12/2005		
<i>Merrimelia, Pelican (Santos)</i>				
Alliance Petroleum Australia Pty Ltd	3.97			
Basin Oil Pty Ltd	2.10			
Bridge Oil Developments Pty Ltd	3.99			
Delhi Petroleum Pty Ltd	20.21			
Novus Australia Resources NL	4.75			
Origin Energy Resources Ltd	13.19			
Reef Oil Pty Ltd	1.97			
Santos (BOL) Pty Ltd	0.21			
Santos Ltd*	40.70			
Santos Petroleum Pty Ltd	0.40			
Vamgas Pty Ltd	8.51			

KEY TO PETROLEUM EXPLORATION AND DEVELOPMENT TITLES

Title				
<i>Accumulation</i>				
Company (Operator*)	Equity	Expiry Date		
PPL 18 Cooper/Eromanga Basin	Blocks: -	Sq km: 109	31/12/2005	
<i>Fly Lake</i>				
Alliance Petroleum Australia Pty Ltd	3.97			
Basin Oil Pty Ltd	2.10			
Bridge Oil Developments Pty Ltd	3.99			
Delhi Petroleum Pty Ltd	20.21			
Novus Australia Resources NL	4.75			
Origin Energy Resources Ltd	13.19			
Reef Oil Pty Ltd	1.97			
Santos (BOL) Pty Ltd	0.21			
Santos Ltd*	40.70			
Santos Petroleum Pty Ltd	0.40			
Vamgas Pty Ltd	8.51			
PPL 19 Cooper/Eromanga Basin	Blocks: -	Sq km: 37	31/12/2005	
<i>Moorari/Woolkina</i>				
Alliance Petroleum Australia Pty Ltd	3.97			
Basin Oil Pty Ltd	2.10			
Bridge Oil Developments Pty Ltd	3.99			
Delhi Petroleum Pty Ltd	20.21			
Novus Australia Resources NL	4.75			
Origin Energy Resources Ltd	13.19			
Reef Oil Pty Ltd	1.97			
Santos (BOL) Pty Ltd	0.21			
Santos Ltd*	40.70			
Santos Petroleum Pty Ltd	0.40			
Vamgas Pty Ltd	8.51			
PPL 20 Cooper/Eromanga Basin	Blocks: -	Sq km: 130	31/12/2005	
<i>Goorarie, Tirrawarra</i>				
Alliance Petroleum Australia Pty Ltd	3.97			
Basin Oil Pty Ltd	2.10			
Bridge Oil Developments Pty Ltd	3.99			
Delhi Petroleum Pty Ltd	20.21			
Novus Australia Resources NL	4.75			
Origin Energy Resources Ltd	13.19			
Reef Oil Pty Ltd	1.97			
Santos (BOL) Pty Ltd	0.21			
Santos Ltd*	40.70			
Santos Petroleum Pty Ltd	0.40			
Vamgas Pty Ltd	8.51			
PPL 21 Otway Basin	Blocks: -	Sq km: 145	30/04/2021	
<i>Caroline</i>				
Air Liquide Australia Ltd*	100.00			
PPL 22 Cooper/Eromanga Basin	Blocks: -	Sq km: 234	31/12/2006	
<i>Marabooka, Mina, Muderu, Nanima, Strzelecki, Wanara</i>				
Alliance Petroleum Australia Pty Ltd	3.97			
Basin Oil Pty Ltd	2.10			
Bridge Oil Developments Pty Ltd	3.99			
Delhi Petroleum Pty Ltd	20.21			
Novus Australia Resources NL	4.75			
Origin Energy Resources Ltd	13.19			
Reef Oil Pty Ltd	1.97			
Santos (BOL) Pty Ltd	0.21			
Santos Ltd*	40.70			
Santos Petroleum Pty Ltd	0.40			
Vamgas Pty Ltd	8.51			
PPL 23 Cooper/Eromanga Basin	Blocks: -	Sq km: 80	31/12/2006	
<i>Munkarie</i>				
Alliance Petroleum Australia Pty Ltd	3.97			
Basin Oil Pty Ltd	2.10			
Bridge Oil Developments Pty Ltd	3.99			
Delhi Petroleum Pty Ltd	20.21			
Novus Australia Resources NL	4.75			
Origin Energy Resources Ltd	13.19			
Reef Oil Pty Ltd	1.97			
Santos (BOL) Pty Ltd	0.21			
Santos Ltd*	40.70			
Santos Petroleum Pty Ltd	0.40			
Vamgas Pty Ltd	8.51			
PPL 24 Cooper/Eromanga Basin	Blocks: -	Sq km: 168	31/12/2006	
<i>Boongala, Caraka, Coochilara, Dieri, Kidman, Marana</i>				
Alliance Petroleum Australia Pty Ltd	3.97			
Basin Oil Pty Ltd	2.10			
Bridge Oil Developments Pty Ltd	3.99			
Delhi Petroleum Pty Ltd	20.21			
Novus Australia Resources NL	4.75			
Origin Energy Resources Ltd	13.19			
Reef Oil Pty Ltd	1.97			
Santos (BOL) Pty Ltd	0.21			
Santos Ltd*	40.70			
Santos Petroleum Pty Ltd	0.40			
Vamgas Pty Ltd	8.51			

Title				
<i>Accumulation</i>				
Company (Operator*)	Equity	Expiry Date		
PPL 25 Cooper/Eromanga Basin	Blocks: -	Sq km: 20	31/12/2006	
<i>Naroonowie</i>				
Alliance Petroleum Australia Pty Ltd	3.97			
Basin Oil Pty Ltd	2.10			
Bridge Oil Developments Pty Ltd	3.99			
Delhi Petroleum Pty Ltd	20.21			
Novus Australia Resources NL	4.75			
Origin Energy Resources Ltd	13.19			
Reef Oil Pty Ltd	1.97			
Santos (BOL) Pty Ltd	0.21			
Santos Ltd*	40.70			
Santos Petroleum Pty Ltd	0.40			
Vamgas Pty Ltd	8.51			
PPL 26 Cooper/Eromanga Basin	Blocks: -	Sq km: 4	10/06/2007	
<i>Cuttapirrie</i>				
Delhi Petroleum Pty Ltd	17.14			
Novus Australia Resources NL	2.97			
Origin Energy Resources Ltd	10.54			
Santos Ltd*	25.60			
Vamgas Pty Ltd	43.75			
PPL 27 Cooper/Eromanga Basin	Blocks: -	Sq km: 23	31/12/2006	
<i>Mudrange</i>				
Alliance Petroleum Australia Pty Ltd	3.97			
Basin Oil Pty Ltd	2.10			
Bridge Oil Developments Pty Ltd	3.99			
Delhi Petroleum Pty Ltd	20.21			
Novus Australia Resources NL	4.75			
Origin Energy Resources Ltd	13.19			
Reef Oil Pty Ltd	1.97			
Santos (BOL) Pty Ltd	0.21			
Santos Ltd*	40.70			
Santos Petroleum Pty Ltd	0.40			
Vamgas Pty Ltd	8.51			
PPL 28 Cooper/Eromanga Basin	Blocks: -	Sq km: 16	6/05/2007	
<i>Kanowana</i>				
Alliance Petroleum Australia Pty Ltd	3.97			
Basin Oil Pty Ltd	2.10			
Bridge Oil Developments Pty Ltd	3.99			
Delhi Petroleum Pty Ltd	20.21			
Novus Australia Resources NL	4.75			
Origin Energy Resources Ltd	13.19			
Reef Oil Pty Ltd	1.97			
Santos (BOL) Pty Ltd	0.21			
Santos Ltd*	40.70			
Santos Petroleum Pty Ltd	0.40			
Vamgas Pty Ltd	8.51			
PPL 29 Cooper/Eromanga Basin	Blocks: -	Sq km: 3	31/12/2008	
<i>Rakoona</i>				
Alliance Petroleum Australia Pty Ltd	3.97			
Basin Oil Pty Ltd	2.10			
Bridge Oil Developments Pty Ltd	3.99			
Delhi Petroleum Pty Ltd	20.21			
Novus Australia Resources NL	4.75			
Origin Energy Resources Ltd	13.19			
Reef Oil Pty Ltd	1.97			
Santos (BOL) Pty Ltd	0.21			
Santos Ltd*	40.70			
Santos Petroleum Pty Ltd	0.40			
Vamgas Pty Ltd	8.51			
PPL 30 Cooper/Eromanga Basin	Blocks: -	Sq km: 49	31/12/2006	
<i>Limestone Creek/Biala</i>				
Alliance Petroleum Australia Pty Ltd	3.97			
Basin Oil Pty Ltd	2.10			
Bridge Oil Developments Pty Ltd	3.99			
Delhi Petroleum Pty Ltd	20.21			
Novus Australia Resources NL	4.75			
Origin Energy Resources Ltd	13.19			
Reef Oil Pty Ltd	1.97			
Santos (BOL) Pty Ltd	0.21			
Santos Ltd*	40.70			
Santos Petroleum Pty Ltd	0.40			
Vamgas Pty Ltd	8.51			

KEY TO PETROLEUM EXPLORATION AND DEVELOPMENT TITLES

Title				
<i>Accumulation</i>				
Company (Operator*)	Equity	Expiry Date		
PPL 31 Cooper/Eromanga Basin	Blocks: -	Sq km: 6	6/05/2007	
<i>Wanaoacha</i>				
Alliance Petroleum Australia Pty Ltd	3.97			
Basin Oil Pty Ltd	2.10			
Bridge Oil Developments Pty Ltd	3.99			
Delhi Petroleum Pty Ltd	20.21			
Novus Australia Resources NL	4.75			
Origin Energy Resources Ltd	13.19			
Reef Oil Pty Ltd	1.97			
Santos (BOL) Pty Ltd	0.21			
Santos Ltd*	40.70			
Santos Petroleum Pty Ltd	0.40			
Vamgas Pty Ltd	8.51			
PPL 32 Cooper/Eromanga Basin	Blocks: -	Sq km: 6	6/05/2007	
<i>Muteroo</i>				
Alliance Petroleum Australia Pty Ltd	3.97			
Basin Oil Pty Ltd	2.10			
Bridge Oil Developments Pty Ltd	3.99			
Delhi Petroleum Pty Ltd	20.21			
Novus Australia Resources NL	4.75			
Origin Energy Resources Ltd	13.19			
Reef Oil Pty Ltd	1.97			
Santos (BOL) Pty Ltd	0.21			
Santos Ltd*	40.70			
Santos Petroleum Pty Ltd	0.40			
Vamgas Pty Ltd	8.51			
PPL 33 Cooper/Eromanga Basin	Blocks: -	Sq km: 15	31/12/2006	
<i>Bookabourdie</i>				
Alliance Petroleum Australia Pty Ltd	3.97			
Basin Oil Pty Ltd	2.10			
Bridge Oil Developments Pty Ltd	3.99			
Delhi Petroleum Pty Ltd	20.21			
Novus Australia Resources NL	4.75			
Origin Energy Resources Ltd	13.19			
Reef Oil Pty Ltd	1.97			
Santos (BOL) Pty Ltd	0.21			
Santos Ltd*	40.70			
Santos Petroleum Pty Ltd	0.40			
Vamgas Pty Ltd	8.51			
PPL 34 Cooper/Eromanga Basin	Blocks: -	Sq km: 9	31/12/2006	
<i>McKintay</i>				
Alliance Petroleum Australia Pty Ltd	3.97			
Basin Oil Pty Ltd	2.10			
Bridge Oil Developments Pty Ltd	3.99			
Delhi Petroleum Pty Ltd	20.21			
Novus Australia Resources NL	4.75			
Origin Energy Resources Ltd	13.19			
Reef Oil Pty Ltd	1.97			
Santos (BOL) Pty Ltd	0.21			
Santos Ltd*	40.70			
Santos Petroleum Pty Ltd	0.40			
Vamgas Pty Ltd	8.51			
PPL 35 Cooper/Eromanga Basin	Blocks: -	Sq km: 21	31/12/2006	
<i>Meranji</i>				
Alliance Petroleum Australia Pty Ltd	3.97			
Basin Oil Pty Ltd	2.10			
Bridge Oil Developments Pty Ltd	3.99			
Delhi Petroleum Pty Ltd	20.21			
Novus Australia Resources NL	4.75			
Origin Energy Resources Ltd	13.19			
Reef Oil Pty Ltd	1.97			
Santos (BOL) Pty Ltd	0.21			
Santos Ltd*	40.70			
Santos Petroleum Pty Ltd	0.40			
Vamgas Pty Ltd	8.51			
PPL 36 Cooper/Eromanga Basin	Blocks: -	Sq km: 47	31/12/2006	
<i>Alwyn, Jena, Ulandi</i>				
Alliance Petroleum Australia Pty Ltd	3.97			
Basin Oil Pty Ltd	2.10			
Bridge Oil Developments Pty Ltd	3.99			
Delhi Petroleum Pty Ltd	20.21			
Novus Australia Resources NL	4.75			
Origin Energy Resources Ltd	13.19			
Reef Oil Pty Ltd	1.97			
Santos (BOL) Pty Ltd	0.21			
Santos Ltd*	40.70			
Santos Petroleum Pty Ltd	0.40			
Vamgas Pty Ltd	8.51			

Title				
<i>Accumulation</i>				
Company (Operator*)	Equity	Expiry Date		
PPL 37 Cooper/Eromanga Basin	Blocks: -	Sq km: 8	6/10/2007	
<i>Spencer</i>				
Alliance Petroleum Australia Pty Ltd	3.97			
Basin Oil Pty Ltd	2.10			
Bridge Oil Developments Pty Ltd	3.99			
Delhi Petroleum Pty Ltd	20.21			
Novus Australia Resources NL	4.75			
Origin Energy Resources Ltd	13.19			
Reef Oil Pty Ltd	1.97			
Santos (BOL) Pty Ltd	0.21			
Santos Ltd*	40.70			
Santos Petroleum Pty Ltd	0.40			
Vamgas Pty Ltd	8.51			
PPL 38 Cooper/Eromanga Basin	Blocks: -	Sq km: 10	6/10/2007	
<i>Dirkala, Dirkala West</i>				
Alliance Petroleum Australia Pty Ltd	3.97			
Basin Oil Pty Ltd	2.10			
Bridge Oil Developments Pty Ltd	3.99			
Delhi Petroleum Pty Ltd	20.21			
Novus Australia Resources NL	4.75			
Origin Energy Resources Ltd	13.19			
Reef Oil Pty Ltd	1.97			
Santos (BOL) Pty Ltd	0.21			
Santos Ltd*	40.70			
Santos Petroleum Pty Ltd	0.40			
Vamgas Pty Ltd	8.51			
PPL 39 Cooper/Eromanga Basin	Blocks: -	Sq km: 2	31/12/2006	
<i>Nungeroo</i>				
Alliance Petroleum Australia Pty Ltd	3.97			
Basin Oil Pty Ltd	2.10			
Bridge Oil Developments Pty Ltd	3.99			
Delhi Petroleum Pty Ltd	20.21			
Novus Australia Resources NL	4.75			
Origin Energy Resources Ltd	13.19			
Reef Oil Pty Ltd	1.97			
Santos (BOL) Pty Ltd	0.21			
Santos Ltd*	40.70			
Santos Petroleum Pty Ltd	0.40			
Vamgas Pty Ltd	8.51			
PPL 40 Cooper/Eromanga Basin	Blocks: -	Sq km: 11	31/12/2007	
<i>Lepena</i>				
Alliance Petroleum Australia Pty Ltd	3.97			
Basin Oil Pty Ltd	2.10			
Bridge Oil Developments Pty Ltd	3.99			
Delhi Petroleum Pty Ltd	20.21			
Novus Australia Resources NL	4.75			
Origin Energy Resources Ltd	13.19			
Reef Oil Pty Ltd	1.97			
Santos (BOL) Pty Ltd	0.21			
Santos Ltd*	40.70			
Santos Petroleum Pty Ltd	0.40			
Vamgas Pty Ltd	8.51			
PPL 41 Cooper/Eromanga Basin	Blocks: -	Sq km: 20	31/12/2011	
<i>Kapinka, Mundi</i>				
Alliance Petroleum Australia Pty Ltd	3.97			
Basin Oil Pty Ltd	2.10			
Bridge Oil Developments Pty Ltd	3.99			
Delhi Petroleum Pty Ltd	20.21			
Novus Australia Resources NL	4.75			
Origin Energy Resources Ltd	13.19			
Reef Oil Pty Ltd	1.97			
Santos (BOL) Pty Ltd	0.21			
Santos Ltd*	40.70			
Santos Petroleum Pty Ltd	0.40			
Vamgas Pty Ltd	8.51			
PPL 42 Cooper/Eromanga Basin	Blocks: -	Sq km: 7	31/12/2008	
<i>Bookabourdie</i>				
Alliance Petroleum Australia Pty Ltd	3.97			
Basin Oil Pty Ltd	2.10			
Bridge Oil Developments Pty Ltd	3.99			
Delhi Petroleum Pty Ltd	20.21			
Novus Australia Resources NL	4.75			
Origin Energy Resources Ltd	13.19			
Reef Oil Pty Ltd	1.97			
Santos (BOL) Pty Ltd	0.21			
Santos Ltd*	40.70			
Santos Petroleum Pty Ltd	0.40			
Vamgas Pty Ltd	8.51			

KEY TO PETROLEUM EXPLORATION AND DEVELOPMENT TITLES

Title				
<i>Accumulation</i>				
Company (Operator*)	Equity	Expiry Date		
PPL 43 Cooper/Eromanga Basin	Blocks: -	Sq km: 3	31/12/2008	
<i>Taylor South</i>				
Alliance Petroleum Australia Pty Ltd	3.97			
Basin Oil Pty Ltd	2.10			
Bridge Oil Developments Pty Ltd	3.99			
Delhi Petroleum Pty Ltd	20.21			
Novus Australia Resources NL	4.75			
Origin Energy Resources Ltd	13.19			
Reef Oil Pty Ltd	1.97			
Santos (BOL) Pty Ltd	0.21			
Santos Ltd*	40.70			
Santos Petroleum Pty Ltd	0.40			
Vamgas Pty Ltd	8.51			
PPL 44 Cooper/Eromanga Basin	Blocks: -	Sq km: 5	31/12/2008	
<i>Bimbaya</i>				
Alliance Petroleum Australia Pty Ltd	3.97			
Basin Oil Pty Ltd	2.10			
Bridge Oil Developments Pty Ltd	3.99			
Delhi Petroleum Pty Ltd	20.21			
Novus Australia Resources NL	4.75			
Origin Energy Resources Ltd	13.19			
Reef Oil Pty Ltd	1.97			
Santos (BOL) Pty Ltd	0.21			
Santos Ltd*	40.70			
Santos Petroleum Pty Ltd	0.40			
Vamgas Pty Ltd	8.51			
PPL 45 Cooper/Eromanga Basin	Blocks: -	Sq km: 1	29/03/2010	
<i>Taloola</i>				
Alliance Petroleum Australia Pty Ltd	3.97			
Basin Oil Pty Ltd	2.10			
Bridge Oil Developments Pty Ltd	3.99			
Delhi Petroleum Pty Ltd	20.21			
Novus Australia Resources NL	4.75			
Origin Energy Resources Ltd	13.19			
Reef Oil Pty Ltd	1.97			
Santos (BOL) Pty Ltd	0.21			
Santos Ltd*	40.70			
Santos Petroleum Pty Ltd	0.40			
Vamgas Pty Ltd	8.51			
PPL 46 Cooper/Eromanga Basin	Blocks: -	Sq km: 2	20/12/2009	
<i>Tantanna</i>				
Alliance Petroleum Australia Pty Ltd	3.97			
Basin Oil Pty Ltd	2.10			
Bridge Oil Developments Pty Ltd	3.99			
Delhi Petroleum Pty Ltd	20.21			
Novus Australia Resources NL	4.75			
Origin Energy Resources Ltd	13.19			
Reef Oil Pty Ltd	1.97			
Santos (BOL) Pty Ltd	0.21			
Santos Ltd*	40.70			
Santos Petroleum Pty Ltd	0.40			
Vamgas Pty Ltd	8.51			
PPL 47 Cooper/Eromanga Basin	Blocks: -	Sq km: 4	20/12/2009	
<i>Sturt</i>				
Alliance Petroleum Australia Pty Ltd	3.97			
Basin Oil Pty Ltd	2.10			
Bridge Oil Developments Pty Ltd	3.99			
Delhi Petroleum Pty Ltd	20.21			
Novus Australia Resources NL	4.75			
Origin Energy Resources Ltd	13.19			
Reef Oil Pty Ltd	1.97			
Santos (BOL) Pty Ltd	0.21			
Santos Ltd*	40.70			
Santos Petroleum Pty Ltd	0.40			
Vamgas Pty Ltd	8.51			
PPL 48 Cooper/Eromanga Basin	Blocks: -	Sq km: 2	31/12/2010	
<i>Kurunda</i>				
Alliance Petroleum Australia Pty Ltd	3.97			
Basin Oil Pty Ltd	2.10			
Bridge Oil Developments Pty Ltd	3.99			
Delhi Petroleum Pty Ltd	20.21			
Novus Australia Resources NL	4.75			
Origin Energy Resources Ltd	13.19			
Reef Oil Pty Ltd	1.97			
Santos (BOL) Pty Ltd	0.21			
Santos Ltd*	40.70			
Santos Petroleum Pty Ltd	0.40			
Vamgas Pty Ltd	8.51			

Title				
<i>Accumulation</i>				
Company (Operator*)	Equity	Expiry Date		
PPL 49 Cooper/Eromanga Basin	Blocks: -	Sq km: 8	31/12/2010	
<i>Andree/Leleptian</i>				
Alliance Petroleum Australia Pty Ltd	3.97			
Basin Oil Pty Ltd	2.10			
Bridge Oil Developments Pty Ltd	3.99			
Delhi Petroleum Pty Ltd	20.21			
Novus Australia Resources NL	4.75			
Origin Energy Resources Ltd	13.19			
Reef Oil Pty Ltd	1.97			
Santos (BOL) Pty Ltd	0.21			
Santos Ltd*	40.70			
Santos Petroleum Pty Ltd	0.40			
Vamgas Pty Ltd	8.51			
PPL 50 Cooper/Eromanga Basin	Blocks: -	Sq km: 17	31/12/2009	
<i>Andree/Leleptian</i>				
Alliance Petroleum Australia Pty Ltd	3.97			
Basin Oil Pty Ltd	2.10			
Bridge Oil Developments Pty Ltd	3.99			
Delhi Petroleum Pty Ltd	20.21			
Novus Australia Resources NL	4.75			
Origin Energy Resources Ltd	13.19			
Reef Oil Pty Ltd	1.97			
Santos (BOL) Pty Ltd	0.21			
Santos Ltd*	40.70			
Santos Petroleum Pty Ltd	0.40			
Vamgas Pty Ltd	8.51			
PPL 51 Cooper/Eromanga Basin	Blocks: -	Sq km: 7	31/12/2011	
<i>Kirrilee</i>				
Alliance Petroleum Australia Pty Ltd	3.97			
Basin Oil Pty Ltd	2.10			
Bridge Oil Developments Pty Ltd	3.99			
Delhi Petroleum Pty Ltd	20.21			
Novus Australia Resources NL	4.75			
Origin Energy Resources Ltd	13.19			
Reef Oil Pty Ltd	1.97			
Santos (BOL) Pty Ltd	0.21			
Santos Ltd*	40.70			
Santos Petroleum Pty Ltd	0.40			
Vamgas Pty Ltd	8.51			
PPL 52 Cooper/Eromanga Basin	Blocks: -	Sq km: 2	31/12/2009	
<i>Gooranie</i>				
Alliance Petroleum Australia Pty Ltd	3.97			
Basin Oil Pty Ltd	2.10			
Bridge Oil Developments Pty Ltd	3.99			
Delhi Petroleum Pty Ltd	20.21			
Novus Australia Resources NL	4.75			
Origin Energy Resources Ltd	13.19			
Reef Oil Pty Ltd	1.97			
Santos (BOL) Pty Ltd	0.21			
Santos Ltd*	40.70			
Santos Petroleum Pty Ltd	0.40			
Vamgas Pty Ltd	8.51			
PPL 53 Cooper/Eromanga Basin	Blocks: -	Sq km: 2	4/12/2010	
<i>Spencer West</i>				
Alliance Petroleum Australia Pty Ltd	3.97			
Basin Oil Pty Ltd	2.10			
Bridge Oil Developments Pty Ltd	3.99			
Delhi Petroleum Pty Ltd	20.21			
Novus Australia Resources NL	4.75			
Origin Energy Resources Ltd	13.19			
Reef Oil Pty Ltd	1.97			
Santos (BOL) Pty Ltd	0.21			
Santos Ltd*	40.70			
Santos Petroleum Pty Ltd	0.40			
Vamgas Pty Ltd	8.51			
PPL 54 Cooper/Eromanga Basin	Blocks: -	Sq km: 1	15/06/2010	
<i>Pintari North</i>				
Alliance Petroleum Australia Pty Ltd	3.97			
Basin Oil Pty Ltd	2.10			
Bridge Oil Developments Pty Ltd	3.99			
Delhi Petroleum Pty Ltd	20.21			
Novus Australia Resources NL	4.75			
Origin Energy Resources Ltd	13.19			
Reef Oil Pty Ltd	1.97			
Santos (BOL) Pty Ltd	0.21			
Santos Ltd*	40.70			
Santos Petroleum Pty Ltd	0.40			
Vamgas Pty Ltd	8.51			

KEY TO PETROLEUM EXPLORATION AND DEVELOPMENT TITLES

Title				
<i>Accumulation</i>				
Company (Operator*)	Equity	Expiry Date		
PPL 55 Cooper/Eromanga Basin	Blocks: -	Sq km: 10	31/12/2011	
<i>Varanus</i>				
Alliance Petroleum Australia Pty Ltd	3.97			
Basin Oil Pty Ltd	2.10			
Bridge Oil Developments Pty Ltd	3.99			
Delhi Petroleum Pty Ltd	20.21			
Novus Australia Resources NL	4.75			
Origin Energy Resources Ltd	13.19			
Reef Oil Pty Ltd	1.97			
Santos (BOL) Pty Ltd	0.21			
Santos Ltd*	40.70			
Santos Petroleum Pty Ltd	0.40			
Vamgas Pty Ltd	8.51			
PPL 56 Cooper/Eromanga Basin	Blocks: -	Sq km: 4	31/12/2013	
<i>Varanus</i>				
Alliance Petroleum Australia Pty Ltd	3.97			
Basin Oil Pty Ltd	2.10			
Bridge Oil Developments Pty Ltd	3.99			
Delhi Petroleum Pty Ltd	20.21			
Novus Australia Resources NL	4.75			
Origin Energy Resources Ltd	13.19			
Reef Oil Pty Ltd	1.97			
Santos (BOL) Pty Ltd	0.21			
Santos Ltd*	40.70			
Santos Petroleum Pty Ltd	0.40			
Vamgas Pty Ltd	8.51			
PPL 57 Cooper/Eromanga Basin	Blocks: -	Sq km: 10	16/07/2011	
<i>Thurakina</i>				
Alliance Petroleum Australia Pty Ltd	3.97			
Basin Oil Pty Ltd	2.10			
Bridge Oil Developments Pty Ltd	3.99			
Delhi Petroleum Pty Ltd	20.21			
Novus Australia Resources NL	4.75			
Origin Energy Resources Ltd	13.19			
Reef Oil Pty Ltd	1.97			
Santos (BOL) Pty Ltd	0.21			
Santos Ltd*	40.70			
Santos Petroleum Pty Ltd	0.40			
Vamgas Pty Ltd	8.51			
PPL 58 Cooper/Eromanga Basin	Blocks: -	Sq km: 15	31/12/2010	
<i>Metika</i>				
Alliance Petroleum Australia Pty Ltd	3.97			
Basin Oil Pty Ltd	2.10			
Bridge Oil Developments Pty Ltd	3.99			
Delhi Petroleum Pty Ltd	20.21			
Novus Australia Resources NL	4.75			
Origin Energy Resources Ltd	13.19			
Reef Oil Pty Ltd	1.97			
Santos (BOL) Pty Ltd	0.21			
Santos Ltd*	40.70			
Santos Petroleum Pty Ltd	0.40			
Vamgas Pty Ltd	8.51			
PPL 59 Cooper/Eromanga Basin	Blocks: -	Sq km: 10	16/07/2011	
<i>Garanjanie</i>				
Alliance Petroleum Australia Pty Ltd	3.97			
Basin Oil Pty Ltd	2.10			
Bridge Oil Developments Pty Ltd	3.99			
Delhi Petroleum Pty Ltd	20.21			
Novus Australia Resources NL	4.75			
Origin Energy Resources Ltd	13.19			
Reef Oil Pty Ltd	1.97			
Santos (BOL) Pty Ltd	0.21			
Santos Ltd*	40.70			
Santos Petroleum Pty Ltd	0.40			
Vamgas Pty Ltd	8.51			
PPL 60 Cooper/Eromanga Basin	Blocks: -	Sq km: 7	25/05/2014	
<i>Wirrarie</i>				
Alliance Petroleum Australia Pty Ltd	3.97			
Basin Oil Pty Ltd	2.10			
Bridge Oil Developments Pty Ltd	3.99			
Delhi Petroleum Pty Ltd	20.21			
Novus Australia Resources NL	4.75			
Origin Energy Resources Ltd	13.19			
Reef Oil Pty Ltd	1.97			
Santos (BOL) Pty Ltd	0.21			
Santos Ltd*	40.70			
Santos Petroleum Pty Ltd	0.40			
Vamgas Pty Ltd	8.51			

Title				
<i>Accumulation</i>				
Company (Operator*)	Equity	Expiry Date		
PPL 61 Cooper/Eromanga Basin	Blocks: -	Sq km: 12	17/10/2011	
<i>Arrakis</i>				
Alliance Petroleum Australia Pty Ltd	3.97			
Basin Oil Pty Ltd	2.10			
Bridge Oil Developments Pty Ltd	3.99			
Delhi Petroleum Pty Ltd	20.21			
Novus Australia Resources NL	4.75			
Origin Energy Resources Ltd	13.19			
Reef Oil Pty Ltd	1.97			
Santos (BOL) Pty Ltd	0.21			
Santos Ltd*	40.70			
Santos Petroleum Pty Ltd	0.40			
Vamgas Pty Ltd	8.51			
PPL 62 Otway Basin	Blocks: -	Sq km: 29	26/11/2011	
<i>Haselgrove, Katnook, Ladbroke Grove</i>				
Omega Oil Pty Ltd	24.30			
Origin Energy Resources Ltd*	20.00			
Sagasco South East Inc.	55.70			
PPL 63 Cooper/Eromanga Basin	Blocks: -	Sq km: 1	23/05/2012	
<i>Malgoona</i>				
Alliance Petroleum Australia Pty Ltd	3.97			
Basin Oil Pty Ltd	2.10			
Bridge Oil Developments Pty Ltd	3.99			
Delhi Petroleum Pty Ltd	20.21			
Novus Australia Resources NL	4.75			
Origin Energy Resources Ltd	13.19			
Reef Oil Pty Ltd	1.97			
Santos (BOL) Pty Ltd	0.21			
Santos Ltd*	40.70			
Santos Petroleum Pty Ltd	0.40			
Vamgas Pty Ltd	8.51			
PPL 64 Cooper/Eromanga Basin	Blocks: -	Sq km: 2	23/05/2012	
<i>Malgoona</i>				
Alliance Petroleum Australia Pty Ltd	3.97			
Basin Oil Pty Ltd	2.10			
Bridge Oil Developments Pty Ltd	3.99			
Delhi Petroleum Pty Ltd	20.21			
Novus Australia Resources NL	4.75			
Origin Energy Resources Ltd	13.19			
Reef Oil Pty Ltd	1.97			
Santos (BOL) Pty Ltd	0.21			
Santos Ltd*	40.70			
Santos Petroleum Pty Ltd	0.40			
Vamgas Pty Ltd	8.51			
PPL 65 Cooper/Eromanga Basin	Blocks: -	Sq km: 6	17/07/2012	
<i>Kujani</i>				
Alliance Petroleum Australia Pty Ltd	3.97			
Basin Oil Pty Ltd	2.10			
Bridge Oil Developments Pty Ltd	3.99			
Delhi Petroleum Pty Ltd	20.21			
Novus Australia Resources NL	4.75			
Origin Energy Resources Ltd	13.19			
Reef Oil Pty Ltd	1.97			
Santos (BOL) Pty Ltd	0.21			
Santos Ltd*	40.70			
Santos Petroleum Pty Ltd	0.40			
Vamgas Pty Ltd	8.51			
PPL 66 Cooper/Eromanga Basin	Blocks: -	Sq km: 11	24/11/2012	
<i>Jack Lake</i>				
Alliance Petroleum Australia Pty Ltd	3.97			
Alliance Petroleum Australia Pty Ltd	3.97			
Basin Oil Pty Ltd	2.10			
Bridge Oil Developments Pty Ltd	3.99			
Delhi Petroleum Pty Ltd	20.21			
Novus Australia Resources NL	4.75			
Origin Energy Resources Ltd	13.19			
Reef Oil Pty Ltd	1.97			
Santos (BOL) Pty Ltd	0.21			
Santos Ltd*	40.70			
Santos Petroleum Pty Ltd	0.40			
Vamgas Pty Ltd	8.51			
PPL 67 Cooper/Eromanga Basin	Blocks: -	Sq km: 11	17/07/2012	
<i>Keena</i>				
Basin Oil Pty Ltd	2.10			
Bridge Oil Developments Pty Ltd	3.99			
Delhi Petroleum Pty Ltd	20.21			
Novus Australia Resources NL	4.75			
Origin Energy Resources Ltd	13.19			
Reef Oil Pty Ltd	1.97			
Santos (BOL) Pty Ltd	0.21			
Santos Ltd*	40.70			
Santos Petroleum Pty Ltd	0.40			
Vamgas Pty Ltd	8.51			

KEY TO PETROLEUM EXPLORATION AND DEVELOPMENT TITLES

Title				
<i>Accumulation</i>				
Company (Operator*)	Equity	Expiry Date		
PPL 68 Cooper/Eromanga Basin	Blocks: -	Sq km: 14	31/12/2011	
<i>Cooba</i>				
Alliance Petroleum Australia Pty Ltd	3.97			
Basin Oil Pty Ltd	2.10			
Bridge Oil Developments Pty Ltd	3.99			
Delhi Petroleum Pty Ltd	20.21			
Novus Australia Resources NL	4.75			
Origin Energy Resources Ltd	13.19			
Reef Oil Pty Ltd	1.97			
Santos (BOL) Pty Ltd	0.21			
Santos Ltd*	40.70			
Santos Petroleum Pty Ltd	0.40			
Vamgas Pty Ltd	8.51			
PPL 69 Cooper/Eromanga Basin	Blocks: -	Sq km: 12	31/12/2011	
<i>Tarwonga</i>				
Alliance Petroleum Australia Pty Ltd	3.97			
Basin Oil Pty Ltd	2.10			
Bridge Oil Developments Pty Ltd	3.99			
Delhi Petroleum Pty Ltd	20.21			
Novus Australia Resources NL	4.75			
Origin Energy Resources Ltd	13.19			
Reef Oil Pty Ltd	1.97			
Santos (BOL) Pty Ltd	0.21			
Santos Ltd*	40.70			
Santos Petroleum Pty Ltd	0.40			
Vamgas Pty Ltd	8.51			
PPL 70 Cooper/Eromanga Basin	Blocks: -	Sq km: 6	25/05/2014	
<i>Farina</i>				
Alliance Petroleum Australia Pty Ltd	3.97			
Basin Oil Pty Ltd	2.10			
Bridge Oil Developments Pty Ltd	3.99			
Delhi Petroleum Pty Ltd	20.21			
Novus Australia Resources NL	4.75			
Origin Energy Resources Ltd	13.19			
Reef Oil Pty Ltd	1.97			
Santos (BOL) Pty Ltd	0.21			
Santos Ltd*	40.70			
Santos Petroleum Pty Ltd	0.40			
Vamgas Pty Ltd	8.51			
PPL 71 Cooper/Eromanga Basin	Blocks: -	Sq km: 16	31/12/2013	
<i>Kerna</i>				
Alliance Petroleum Australia Pty Ltd	3.97			
Basin Oil Pty Ltd	2.10			
Bridge Oil Developments Pty Ltd	3.99			
Delhi Petroleum Pty Ltd	20.21			
Novus Australia Resources NL	4.75			
Origin Energy Resources Ltd	13.19			
Reef Oil Pty Ltd	1.97			
Santos (BOL) Pty Ltd	0.21			
Santos Ltd*	40.70			
Santos Petroleum Pty Ltd	0.40			
Vamgas Pty Ltd	8.51			
PPL 72 Cooper/Eromanga Basin	Blocks: -	Sq km: 17	31/12/2013	
<i>Dilhee, Pira</i>				
Alliance Petroleum Australia Pty Ltd	3.97			
Basin Oil Pty Ltd	2.10			
Bridge Oil Developments Pty Ltd	3.99			
Delhi Petroleum Pty Ltd	20.21			
Novus Australia Resources NL	4.75			
Origin Energy Resources Ltd	13.19			
Reef Oil Pty Ltd	1.97			
Santos (BOL) Pty Ltd	0.21			
Santos Ltd*	40.70			
Santos Petroleum Pty Ltd	0.40			
Vamgas Pty Ltd	8.51			
PPL 73 Cooper/Eromanga Basin	Blocks: -	Sq km: 1	31/12/2015	
<i>Mudlake</i>				
Alliance Petroleum Australia Pty Ltd	3.97			
Basin Oil Pty Ltd	2.10			
Bridge Oil Developments Pty Ltd	3.99			
Delhi Petroleum Pty Ltd	20.21			
Novus Australia Resources NL	4.75			
Origin Energy Resources Ltd	13.19			
Reef Oil Pty Ltd	1.97			
Santos (BOL) Pty Ltd	0.21			
Santos Ltd*	40.70			
Santos Petroleum Pty Ltd	0.40			
Vamgas Pty Ltd	8.51			

Title				
<i>Accumulation</i>				
Company (Operator*)	Equity	Expiry Date		
PPL 74 Cooper/Eromanga Basin	Blocks: -	Sq km: 5	31/12/2015	
<i>Allambi</i>				
Alliance Petroleum Australia Pty Ltd	3.97			
Basin Oil Pty Ltd	2.10			
Bridge Oil Developments Pty Ltd	3.99			
Delhi Petroleum Pty Ltd	20.21			
Novus Australia Resources NL	4.75			
Origin Energy Resources Ltd	13.19			
Reef Oil Pty Ltd	1.97			
Santos (BOL) Pty Ltd	0.21			
Santos Ltd*	40.70			
Santos Petroleum Pty Ltd	0.40			
Vamgas Pty Ltd	8.51			
PPL 75 Cooper/Eromanga Basin	Blocks: -	Sq km: 6	26/10/2016	
<i>Caladan</i>				
Alliance Petroleum Australia Pty Ltd	3.97			
Basin Oil Pty Ltd	2.10			
Bridge Oil Developments Pty Ltd	3.99			
Delhi Petroleum Pty Ltd	20.21			
Novus Australia Resources NL	4.75			
Origin Energy Resources Ltd	13.19			
Reef Oil Pty Ltd	1.97			
Santos (BOL) Pty Ltd	0.21			
Santos Ltd*	40.70			
Santos Petroleum Pty Ltd	0.40			
Vamgas Pty Ltd	8.51			
PPL 76 Cooper/Eromanga Basin	Blocks: -	Sq km: 3	26/10/2016	
<i>Telopea</i>				
Delhi Petroleum Pty Ltd	17.14			
Novus Australia Resources NL	2.97			
Origin Energy Resources Ltd	10.54			
Santos Ltd*	25.60			
Vamgas Pty Ltd	43.75			
PPL 77 Cooper/Eromanga Basin	Blocks: -	Sq km: 10	26/10/2016	
<i>Keleary</i>				
Delhi Petroleum Pty Ltd	17.14			
Novus Australia Resources NL	2.97			
Origin Energy Resources Ltd	10.54			
Santos Ltd*	25.60			
Vamgas Pty Ltd	43.75			
PPL 78 Cooper/Eromanga Basin	Blocks: -	Sq km: 6	31/12/2016	
<i>Baratta</i>				
Alliance Petroleum Australia Pty Ltd	3.97			
Basin Oil Pty Ltd	2.10			
Bridge Oil Developments Pty Ltd	3.99			
Delhi Petroleum Pty Ltd	20.21			
Novus Australia Resources NL	4.75			
Origin Energy Resources Ltd	13.19			
Reef Oil Pty Ltd	1.97			
Santos (BOL) Pty Ltd	0.21			
Santos Ltd*	40.70			
Santos Petroleum Pty Ltd	0.40			
Vamgas Pty Ltd	8.51			
PPL 79 Cooper/Eromanga Basin	Blocks: -	Sq km: 2	31/12/2016	
<i>Gahnia</i>				
Alliance Petroleum Australia Pty Ltd	3.97			
Basin Oil Pty Ltd	2.10			
Bridge Oil Developments Pty Ltd	3.99			
Delhi Petroleum Pty Ltd	20.21			
Novus Australia Resources NL	4.75			
Origin Energy Resources Ltd	13.19			
Reef Oil Pty Ltd	1.97			
Santos (BOL) Pty Ltd	0.21			
Santos Ltd*	40.70			
Santos Petroleum Pty Ltd	0.40			
Vamgas Pty Ltd	8.51			
PPL 80 Cooper/Eromanga Basin	Blocks: -	Sq km: 3	31/12/2016	
<i>Corra</i>				
Alliance Petroleum Australia Pty Ltd	3.97			
Basin Oil Pty Ltd	2.10			
Bridge Oil Developments Pty Ltd	3.99			
Delhi Petroleum Pty Ltd	20.21			
Novus Australia Resources NL	4.75			
Origin Energy Resources Ltd	13.19			
Reef Oil Pty Ltd	1.97			
Santos (BOL) Pty Ltd	0.21			
Santos Ltd*	40.70			
Santos Petroleum Pty Ltd	0.40			
Vamgas Pty Ltd	8.51			

KEY TO PETROLEUM EXPLORATION AND DEVELOPMENT TITLES

Title				
<i>Accumulation</i>				
Company (Operator*)	Equity	Expiry Date		
PPL 81 Cooper/Eromanga Basin	Blocks: -	Sq km: 4	31/10/2017	
<i>Caladan, Caladan North East</i>				
Alliance Petroleum Australia Pty Ltd	3.97			
Basin Oil Pty Ltd	2.10			
Bridge Oil Developments Pty Ltd	3.99			
Delhi Petroleum Pty Ltd	20.21			
Novus Australia Resources NL	4.75			
Origin Energy Resources Ltd	13.19			
Reef Oil Pty Ltd	1.97			
Santos (BOL) Pty Ltd	0.21			
Santos Ltd*	40.70			
Santos Petroleum Pty Ltd	0.40			
Vamgas Pty Ltd	8.51			
PPL 82 Cooper/Eromanga Basin	Blocks: -	Sq km: 6	31/12/2016	
<i>Waukatanna</i>				
Alliance Petroleum Australia Pty Ltd	3.97			
Basin Oil Pty Ltd	2.10			
Bridge Oil Developments Pty Ltd	3.99			
Delhi Petroleum Pty Ltd	20.21			
Novus Australia Resources NL	4.75			
Origin Energy Resources Ltd	13.19			
Reef Oil Pty Ltd	1.97			
Santos (BOL) Pty Ltd	0.21			
Santos Ltd*	40.70			
Santos Petroleum Pty Ltd	0.40			
Vamgas Pty Ltd	8.51			
PPL 83 Cooper/Eromanga Basin	Blocks: -	Sq km: 3	31/12/2016	
<i>Pogona</i>				
Alliance Petroleum Australia Pty Ltd	3.97			
Basin Oil Pty Ltd	2.10			
Bridge Oil Developments Pty Ltd	3.99			
Delhi Petroleum Pty Ltd	20.21			
Novus Australia Resources NL	4.75			
Origin Energy Resources Ltd	13.19			
Reef Oil Pty Ltd	1.97			
Santos (BOL) Pty Ltd	0.21			
Santos Ltd*	40.70			
Santos Petroleum Pty Ltd	0.40			
Vamgas Pty Ltd	8.51			
PPL 84 Cooper/Eromanga Basin	Blocks: -	Sq km: 28	6/06/2018	
<i>Barina</i>				
Alliance Petroleum Australia Pty Ltd	3.97			
Basin Oil Pty Ltd	2.10			
Bridge Oil Developments Pty Ltd	3.99			
Delhi Petroleum Pty Ltd	20.21			
Novus Australia Resources NL	4.75			
Origin Energy Resources Ltd	13.19			
Reef Oil Pty Ltd	1.97			
Santos (BOL) Pty Ltd	0.21			
Santos Ltd*	40.70			
Santos Petroleum Pty Ltd	0.40			
Vamgas Pty Ltd	8.51			
PPL 85 Cooper/Eromanga Basin	Blocks: -	Sq km: 3	31/12/2017	
<i>Alisma</i>				
Alliance Petroleum Australia Pty Ltd	3.97			
Basin Oil Pty Ltd	2.10			
Bridge Oil Developments Pty Ltd	3.99			
Delhi Petroleum Pty Ltd	20.21			
Novus Australia Resources NL	4.75			
Origin Energy Resources Ltd	13.19			
Reef Oil Pty Ltd	1.97			
Santos (BOL) Pty Ltd	0.21			
Santos Ltd*	40.70			
Santos Petroleum Pty Ltd	0.40			
Vamgas Pty Ltd	8.51			
PPL 86 Cooper/Eromanga Basin	Blocks: -	Sq km: 2	31/12/2017	
<i>Carmina</i>				
Alliance Petroleum Australia Pty Ltd	3.97			
Basin Oil Pty Ltd	2.10			
Bridge Oil Developments Pty Ltd	3.99			
Delhi Petroleum Pty Ltd	20.21			
Novus Australia Resources NL	4.75			
Origin Energy Resources Ltd	13.19			
Reef Oil Pty Ltd	1.97			
Santos (BOL) Pty Ltd	0.21			
Santos Ltd*	40.70			
Santos Petroleum Pty Ltd	0.40			
Vamgas Pty Ltd	8.51			

Title				
<i>Accumulation</i>				
Company (Operator*)	Equity	Expiry Date		
PPL 87 Cooper/Eromanga Basin	Blocks: -	Sq km: 5	31/12/2017	
<i>Boobook</i>				
Alliance Petroleum Australia Pty Ltd	3.97			
Basin Oil Pty Ltd	2.10			
Bridge Oil Developments Pty Ltd	3.99			
Delhi Petroleum Pty Ltd	20.21			
Novus Australia Resources NL	4.75			
Origin Energy Resources Ltd	13.19			
Reef Oil Pty Ltd	1.97			
Santos (BOL) Pty Ltd	0.21			
Santos Ltd*	40.70			
Santos Petroleum Pty Ltd	0.40			
Vamgas Pty Ltd	8.51			
PPL 88 Cooper/Eromanga Basin	Blocks: -	Sq km: 2	31/12/2017	
<i>Lyxasa</i>				
Alliance Petroleum Australia Pty Ltd	3.97			
Basin Oil Pty Ltd	2.10			
Bridge Oil Developments Pty Ltd	3.99			
Delhi Petroleum Pty Ltd	20.21			
Novus Australia Resources NL	4.75			
Origin Energy Resources Ltd	13.19			
Reef Oil Pty Ltd	1.97			
Santos (BOL) Pty Ltd	0.21			
Santos Ltd*	40.70			
Santos Petroleum Pty Ltd	0.40			
Vamgas Pty Ltd	8.51			
PPL 89 Cooper/Eromanga Basin	Blocks: -	Sq km: 6	31/12/2017	
<i>Bobs Well</i>				
Alliance Petroleum Australia Pty Ltd	3.97			
Basin Oil Pty Ltd	2.10			
Bridge Oil Developments Pty Ltd	3.99			
Delhi Petroleum Pty Ltd	20.21			
Novus Australia Resources NL	4.75			
Origin Energy Resources Ltd	13.19			
Reef Oil Pty Ltd	1.97			
Santos (BOL) Pty Ltd	0.21			
Santos Ltd*	40.70			
Santos Petroleum Pty Ltd	0.40			
Vamgas Pty Ltd	8.51			
PPL 90 Cooper/Eromanga Basin	Blocks: -	Sq km: 61	31/12/2017	
<i>Packsaddle/Pondrinie</i>				
Alliance Petroleum Australia Pty Ltd	3.97			
Basin Oil Pty Ltd	2.10			
Bridge Oil Developments Pty Ltd	3.99			
Delhi Petroleum Pty Ltd	20.21			
Novus Australia Resources NL	4.75			
Origin Energy Resources Ltd	13.19			
Reef Oil Pty Ltd	1.97			
Santos (BOL) Pty Ltd	0.21			
Santos Ltd*	40.70			
Santos Petroleum Pty Ltd	0.40			
Vamgas Pty Ltd	8.51			
PPL 91 Cooper/Eromanga Basin	Blocks: -	Sq km: 9	31/12/2017	
<i>Cowalli</i>				
Alliance Petroleum Australia Pty Ltd	3.97			
Basin Oil Pty Ltd	2.10			
Bridge Oil Developments Pty Ltd	3.99			
Delhi Petroleum Pty Ltd	20.21			
Novus Australia Resources NL	4.75			
Origin Energy Resources Ltd	13.19			
Reef Oil Pty Ltd	1.97			
Santos (BOL) Pty Ltd	0.21			
Santos Ltd*	40.70			
Santos Petroleum Pty Ltd	0.40			
Vamgas Pty Ltd	8.51			
PPL 92 Cooper/Eromanga Basin	Blocks: -	Sq km: 2	31/12/2017	
<i>Plantago</i>				
Alliance Petroleum Australia Pty Ltd	3.97			
Basin Oil Pty Ltd	2.10			
Bridge Oil Developments Pty Ltd	3.99			
Delhi Petroleum Pty Ltd	20.21			
Novus Australia Resources NL	4.75			
Origin Energy Resources Ltd	13.19			
Reef Oil Pty Ltd	1.97			
Santos (BOL) Pty Ltd	0.21			
Santos Ltd*	40.70			
Santos Petroleum Pty Ltd	0.40			
Vamgas Pty Ltd	8.51			

KEY TO PETROLEUM EXPLORATION AND DEVELOPMENT TITLES

Title				
<i>Accumulation</i>				
Company (Operator*)	Equity	Expiry Date		
PPL 93 Cooper/Eromanga Basin	Blocks: -	Sq km: 7	31/12/2017	
<i>Wilpinie</i>				
Alliance Petroleum Australia Pty Ltd	3.97			
Basin Oil Pty Ltd	2.10			
Bridge Oil Developments Pty Ltd	3.99			
Delhi Petroleum Pty Ltd	20.21			
Novus Australia Resources NL	4.75			
Origin Energy Resources Ltd	13.19			
Reef Oil Pty Ltd	1.97			
Santos (BOL) Pty Ltd	0.21			
Santos Ltd*	40.70			
Santos Petroleum Pty Ltd	0.40			
Vamgas Pty Ltd	8.51			
PPL 94 Cooper/Eromanga Basin	Blocks: -	Sq km: 7	8/01/2019	
<i>Atrides</i>				
Alliance Petroleum Australia Pty Ltd	3.97			
Basin Oil Pty Ltd	2.10			
Bridge Oil Developments Pty Ltd	3.99			
Delhi Petroleum Pty Ltd	20.21			
Novus Australia Resources NL	4.75			
Origin Energy Resources Ltd	13.19			
Reef Oil Pty Ltd	1.97			
Santos (BOL) Pty Ltd	0.21			
Santos Ltd*	40.70			
Santos Petroleum Pty Ltd	0.40			
Vamgas Pty Ltd	8.51			
PPL 95 Cooper/Eromanga Basin	Blocks: -	Sq km: 12	21/05/2019	
<i>Nephrite</i>				
Alliance Petroleum Australia Pty Ltd	3.97			
Basin Oil Pty Ltd	2.10			
Bridge Oil Developments Pty Ltd	3.99			
Delhi Petroleum Pty Ltd	20.21			
Novus Australia Resources NL	4.75			
Origin Energy Resources Ltd	13.19			
Reef Oil Pty Ltd	1.97			
Santos (BOL) Pty Ltd	0.21			
Santos Ltd*	40.70			
Santos Petroleum Pty Ltd	0.40			
Vamgas Pty Ltd	8.51			
PPL 96 Cooper/Eromanga Basin	Blocks: -	Sq km: 3	31/12/2017	
<i>Beckler</i>				
Alliance Petroleum Australia Pty Ltd	3.97			
Basin Oil Pty Ltd	2.10			
Bridge Oil Developments Pty Ltd	3.99			
Delhi Petroleum Pty Ltd	20.21			
Novus Australia Resources NL	4.75			
Origin Energy Resources Ltd	13.19			
Reef Oil Pty Ltd	1.97			
Santos (BOL) Pty Ltd	0.21			
Santos Ltd*	40.70			
Santos Petroleum Pty Ltd	0.40			
Vamgas Pty Ltd	8.51			
PPL 97 Cooper/Eromanga Basin	Blocks: -	Sq km: 2	31/12/2017	
<i>Beckler</i>				
Alliance Petroleum Australia Pty Ltd	3.97			
Basin Oil Pty Ltd	2.10			
Bridge Oil Developments Pty Ltd	3.99			
Delhi Petroleum Pty Ltd	20.21			
Novus Australia Resources NL	4.75			
Origin Energy Resources Ltd	13.19			
Reef Oil Pty Ltd	1.97			
Santos (BOL) Pty Ltd	0.21			
Santos Ltd*	40.70			
Santos Petroleum Pty Ltd	0.40			
Vamgas Pty Ltd	8.51			
PPL 98 Cooper/Eromanga Basin	Blocks: -	Sq km: 7	31/12/2017	
<i>Merupa</i>				
Alliance Petroleum Australia Pty Ltd	3.97			
Basin Oil Pty Ltd	2.10			
Bridge Oil Developments Pty Ltd	3.99			
Delhi Petroleum Pty Ltd	20.21			
Novus Australia Resources NL	4.75			
Origin Energy Resources Ltd	13.19			
Reef Oil Pty Ltd	1.97			
Santos (BOL) Pty Ltd	0.21			
Santos Ltd*	40.70			
Santos Petroleum Pty Ltd	0.40			
Vamgas Pty Ltd	8.51			

Title				
<i>Accumulation</i>				
Company (Operator*)	Equity	Expiry Date		
PPL 99 Cooper/Eromanga Basin	Blocks: -	Sq km: 7	31/12/2017	
<i>Merindal</i>				
Alliance Petroleum Australia Pty Ltd	3.97			
Basin Oil Pty Ltd	2.10			
Bridge Oil Developments Pty Ltd	3.99			
Delhi Petroleum Pty Ltd	20.21			
Novus Australia Resources NL	4.75			
Origin Energy Resources Ltd	13.19			
Reef Oil Pty Ltd	1.97			
Santos (BOL) Pty Ltd	0.21			
Santos Ltd*	40.70			
Santos Petroleum Pty Ltd	0.40			
Vamgas Pty Ltd	8.51			
PPL 100 Cooper/Eromanga Basin	Blocks: -	Sq km: 5	31/12/2017	
<i>Nappaooonge, Nappaooonge East</i>				
Alliance Petroleum Australia Pty Ltd	3.97			
Basin Oil Pty Ltd	2.10			
Bridge Oil Developments Pty Ltd	3.99			
Delhi Petroleum Pty Ltd	20.21			
Novus Australia Resources NL	4.75			
Origin Energy Resources Ltd	13.19			
Reef Oil Pty Ltd	1.97			
Santos (BOL) Pty Ltd	0.21			
Santos Ltd*	40.70			
Santos Petroleum Pty Ltd	0.40			
Vamgas Pty Ltd	8.51			
PPL 101 Cooper/Eromanga Basin	Blocks: -	Sq km: 214	2/11/2018	
<i>Swan Lake</i>				
Alliance Petroleum Australia Pty Ltd	3.97			
Basin Oil Pty Ltd	2.10			
Bridge Oil Developments Pty Ltd	3.99			
Delhi Petroleum Pty Ltd	20.21			
Novus Australia Resources NL	4.75			
Origin Energy Resources Ltd	13.19			
Reef Oil Pty Ltd	1.97			
Santos (BOL) Pty Ltd	0.21			
Santos Ltd*	40.70			
Santos Petroleum Pty Ltd	0.40			
Vamgas Pty Ltd	8.51			
PPL 102 Cooper/Eromanga Basin	Blocks: -	Sq km: 231	2/11/2018	
<i>Wantana</i>				
Alliance Petroleum Australia Pty Ltd	3.97			
Basin Oil Pty Ltd	2.10			
Bridge Oil Developments Pty Ltd	3.99			
Delhi Petroleum Pty Ltd	20.21			
Novus Australia Resources NL	4.75			
Origin Energy Resources Ltd	13.19			
Reef Oil Pty Ltd	1.97			
Santos (BOL) Pty Ltd	0.21			
Santos Ltd*	40.70			
Santos Petroleum Pty Ltd	0.40			
Vamgas Pty Ltd	8.51			
PPL 103 Cooper/Eromanga Basin	Blocks: -	Sq km: 258	2/11/2018	
<i>Wantana</i>				
Alliance Petroleum Australia Pty Ltd	3.97			
Basin Oil Pty Ltd	2.10			
Bridge Oil Developments Pty Ltd	3.99			
Delhi Petroleum Pty Ltd	20.21			
Novus Australia Resources NL	4.75			
Origin Energy Resources Ltd	13.19			
Reef Oil Pty Ltd	1.97			
Santos (BOL) Pty Ltd	0.21			
Santos Ltd*	40.70			
Santos Petroleum Pty Ltd	0.40			
Vamgas Pty Ltd	8.51			
PPL 104 Cooper/Eromanga Basin	Blocks: -	Sq km: 259	2/11/2018	
Alliance Petroleum Australia Pty Ltd	3.97			
Basin Oil Pty Ltd	2.10			
Bridge Oil Developments Pty Ltd	3.99			
Delhi Petroleum Pty Ltd	20.21			
Novus Australia Resources NL	4.75			
Origin Energy Resources Ltd	13.19			
Reef Oil Pty Ltd	1.97			
Santos (BOL) Pty Ltd	0.21			
Santos Ltd*	40.70			
Santos Petroleum Pty Ltd	0.40			
Vamgas Pty Ltd	8.51			

KEY TO PETROLEUM EXPLORATION AND DEVELOPMENT TITLES

Title				
<i>Accumulation</i>				
Company (Operator*)	Equity	Expiry Date		
PPL 105 Cooper/Eromanga Basin	Blocks: -	Sq km: 256	2/11/2018	
<i>Kirby</i>				
Alliance Petroleum Australia Pty Ltd	3.97			
Basin Oil Pty Ltd	2.10			
Bridge Oil Developments Pty Ltd	3.99			
Delhi Petroleum Pty Ltd	20.21			
Novus Australia Resources NL	4.75			
Origin Energy Resources Ltd	13.19			
Reef Oil Pty Ltd	1.97			
Santos (BOL) Pty Ltd	0.21			
Santos Ltd*	40.70			
Santos Petroleum Pty Ltd	0.40			
Vamgas Pty Ltd	8.51			
PPL 106 Cooper/Eromanga Basin	Blocks: -	Sq km: 254	2/11/2018	
Alliance Petroleum Australia Pty Ltd	3.97			
Basin Oil Pty Ltd	2.10			
Bridge Oil Developments Pty Ltd	3.99			
Delhi Petroleum Pty Ltd	20.21			
Novus Australia Resources NL	4.75			
Origin Energy Resources Ltd	13.19			
Reef Oil Pty Ltd	1.97			
Santos (BOL) Pty Ltd	0.21			
Santos Ltd*	40.70			
Santos Petroleum Pty Ltd	0.40			
Vamgas Pty Ltd	8.51			
PPL 107 Cooper/Eromanga Basin	Blocks: -	Sq km: 217	2/11/2018	
<i>Davren</i>				
Alliance Petroleum Australia Pty Ltd	3.97			
Basin Oil Pty Ltd	2.10			
Bridge Oil Developments Pty Ltd	3.99			
Delhi Petroleum Pty Ltd	20.21			
Novus Australia Resources NL	4.75			
Origin Energy Resources Ltd	13.19			
Reef Oil Pty Ltd	1.97			
Santos (BOL) Pty Ltd	0.21			
Santos Ltd*	40.70			
Santos Petroleum Pty Ltd	0.40			
Vamgas Pty Ltd	8.51			
PPL 108 Cooper/Eromanga Basin	Blocks: -	Sq km: 254	2/11/2018	
Alliance Petroleum Australia Pty Ltd	3.97			
Basin Oil Pty Ltd	2.10			
Bridge Oil Developments Pty Ltd	3.99			
Delhi Petroleum Pty Ltd	20.21			
Novus Australia Resources NL	4.75			
Origin Energy Resources Ltd	13.19			
Reef Oil Pty Ltd	1.97			
Santos (BOL) Pty Ltd	0.21			
Santos Ltd*	40.70			
Santos Petroleum Pty Ltd	0.40			
Vamgas Pty Ltd	8.51			
PPL 109 Cooper/Eromanga Basin	Blocks: -	Sq km: 248	2/11/2018	
<i>Bulyeroo</i>				
Alliance Petroleum Australia Pty Ltd	3.97			
Basin Oil Pty Ltd	2.10			
Bridge Oil Developments Pty Ltd	3.99			
Delhi Petroleum Pty Ltd	20.21			
Novus Australia Resources NL	4.75			
Origin Energy Resources Ltd	13.19			
Reef Oil Pty Ltd	1.97			
Santos (BOL) Pty Ltd	0.21			
Santos Ltd*	40.70			
Santos Petroleum Pty Ltd	0.40			
Vamgas Pty Ltd	8.51			
PPL 110 Cooper/Eromanga Basin	Blocks: -	Sq km: 228	2/11/2018	
<i>Burley</i>				
Alliance Petroleum Australia Pty Ltd	3.97			
Basin Oil Pty Ltd	2.10			
Bridge Oil Developments Pty Ltd	3.99			
Delhi Petroleum Pty Ltd	20.21			
Novus Australia Resources NL	4.75			
Origin Energy Resources Ltd	13.19			
Reef Oil Pty Ltd	1.97			
Santos (BOL) Pty Ltd	0.21			
Santos Ltd*	40.70			
Santos Petroleum Pty Ltd	0.40			
Vamgas Pty Ltd	8.51			

Title				
<i>Accumulation</i>				
Company (Operator*)	Equity	Expiry Date		
PPL 111 Cooper/Eromanga Basin	Blocks: -	Sq km: 254	2/11/2018	
<i>McLeod</i>				
Alliance Petroleum Australia Pty Ltd	3.97			
Basin Oil Pty Ltd	2.10			
Bridge Oil Developments Pty Ltd	3.99			
Delhi Petroleum Pty Ltd	20.21			
Novus Australia Resources NL	4.75			
Origin Energy Resources Ltd	13.19			
Reef Oil Pty Ltd	1.97			
Santos (BOL) Pty Ltd	0.21			
Santos Ltd*	40.70			
Santos Petroleum Pty Ltd	0.40			
Vamgas Pty Ltd	8.51			
PPL 113 Cooper/Eromanga Basin	Blocks: -	Sq km: 232	2/11/2018	
<i>Moomba</i>				
Alliance Petroleum Australia Pty Ltd	3.97			
Basin Oil Pty Ltd	2.10			
Bridge Oil Developments Pty Ltd	3.99			
Delhi Petroleum Pty Ltd	20.21			
Novus Australia Resources NL	4.75			
Origin Energy Resources Ltd	13.19			
Reef Oil Pty Ltd	1.97			
Santos (BOL) Pty Ltd	0.21			
Santos Ltd*	40.70			
Santos Petroleum Pty Ltd	0.40			
Vamgas Pty Ltd	8.51			
PPL 114 Cooper/Eromanga Basin	Blocks: -	Sq km: 242	2/11/2018	
Alliance Petroleum Australia Pty Ltd	3.97			
Basin Oil Pty Ltd	2.10			
Bridge Oil Developments Pty Ltd	3.99			
Delhi Petroleum Pty Ltd	20.21			
Novus Australia Resources NL	4.75			
Origin Energy Resources Ltd	13.19			
Reef Oil Pty Ltd	1.97			
Santos (BOL) Pty Ltd	0.21			
Santos Ltd*	40.70			
Santos Petroleum Pty Ltd	0.40			
Vamgas Pty Ltd	8.51			
PPL 115 Cooper/Eromanga Basin	Blocks: -	Sq km: 251	2/11/2018	
<i>Three Queens</i>				
Alliance Petroleum Australia Pty Ltd	3.97			
Basin Oil Pty Ltd	2.10			
Bridge Oil Developments Pty Ltd	3.99			
Delhi Petroleum Pty Ltd	20.21			
Novus Australia Resources NL	4.75			
Origin Energy Resources Ltd	13.19			
Reef Oil Pty Ltd	1.97			
Santos (BOL) Pty Ltd	0.21			
Santos Ltd*	40.70			
Santos Petroleum Pty Ltd	0.40			
Vamgas Pty Ltd	8.51			
PPL 116 Cooper/Eromanga Basin	Blocks: -	Sq km: 249	2/11/2018	
Alliance Petroleum Australia Pty Ltd	3.97			
Basin Oil Pty Ltd	2.10			
Bridge Oil Developments Pty Ltd	3.99			
Delhi Petroleum Pty Ltd	20.21			
Novus Australia Resources NL	4.75			
Origin Energy Resources Ltd	13.19			
Reef Oil Pty Ltd	1.97			
Santos (BOL) Pty Ltd	0.21			
Santos Ltd*	40.70			
Santos Petroleum Pty Ltd	0.40			
Vamgas Pty Ltd	8.51			
PPL 117 Cooper/Eromanga Basin	Blocks: -	Sq km: 239	2/11/2018	
<i>Wilpinnie</i>				
Alliance Petroleum Australia Pty Ltd	3.97			
Basin Oil Pty Ltd	2.10			
Bridge Oil Developments Pty Ltd	3.99			
Delhi Petroleum Pty Ltd	20.21			
Novus Australia Resources NL	4.75			
Origin Energy Resources Ltd	13.19			
Reef Oil Pty Ltd	1.97			
Santos (BOL) Pty Ltd	0.21			
Santos Ltd*	40.70			
Santos Petroleum Pty Ltd	0.40			
Vamgas Pty Ltd	8.51			
PPL 118 Cooper/Eromanga Basin	Blocks: -	Sq km: 1	26/05/2019	
<i>Kudriekke</i>				
Delhi Petroleum Pty Ltd	17.14			
Novus Australia Resources NL	2.97			
Origin Energy Resources Ltd	10.54			
Santos Ltd*	25.60			
Vamgas Pty Ltd	43.75			

KEY TO PETROLEUM EXPLORATION AND DEVELOPMENT TITLES

Title				
<i>Accumulation</i>				
Company (Operator*)	Equity	Expiry Date		
PPL 119 Cooper/Eromanga Basin	Blocks: -	Sq km: 7	31/12/2017	
<i>Kudrieke, Mitchie</i>				
Alliance Petroleum Australia Pty Ltd	3.97			
Basin Oil Pty Ltd	2.10			
Bridge Oil Developments Pty Ltd	3.99			
Delhi Petroleum Pty Ltd	20.21			
Novus Australia Resources NL	4.75			
Origin Energy Resources Ltd	13.19			
Reef Oil Pty Ltd	1.97			
Santos (BOL) Pty Ltd	0.21			
Santos Ltd*	40.70			
Santos Petroleum Pty Ltd	0.40			
Vamgas Pty Ltd	8.51			
PPL 120 Cooper/Eromanga Basin	Blocks: -	Sq km: 4	31/12/2017	
<i>Lake MacMillan</i>				
Alliance Petroleum Australia Pty Ltd	3.97			
Basin Oil Pty Ltd	2.10			
Bridge Oil Developments Pty Ltd	3.99			
Delhi Petroleum Pty Ltd	20.21			
Novus Australia Resources NL	4.75			
Origin Energy Resources Ltd	13.19			
Reef Oil Pty Ltd	1.97			
Santos (BOL) Pty Ltd	0.21			
Santos Ltd*	40.70			
Santos Petroleum Pty Ltd	0.40			
Vamgas Pty Ltd	8.51			
PPL 121 Cooper/Eromanga Basin	Blocks: -	Sq km: 5	26/05/2019	
<i>Tarragon</i>				
Alliance Petroleum Australia Pty Ltd	3.97			
Basin Oil Pty Ltd	2.10			
Bridge Oil Developments Pty Ltd	3.99			
Delhi Petroleum Pty Ltd	20.21			
Novus Australia Resources NL	4.75			
Origin Energy Resources Ltd	13.19			
Reef Oil Pty Ltd	1.97			
Santos (BOL) Pty Ltd	0.21			
Santos Ltd*	40.70			
Santos Petroleum Pty Ltd	0.40			
Vamgas Pty Ltd	8.51			
PPL 122 Cooper/Eromanga Basin	Blocks: -	Sq km: 6	23/09/2019	
<i>Tallerange</i>				
Alliance Petroleum Australia Pty Ltd	3.97			
Basin Oil Pty Ltd	2.10			
Bridge Oil Developments Pty Ltd	3.99			
Delhi Petroleum Pty Ltd	20.21			
Novus Australia Resources NL	4.75			
Origin Energy Resources Ltd	13.19			
Reef Oil Pty Ltd	1.97			
Santos (BOL) Pty Ltd	0.21			
Santos Ltd*	40.70			
Santos Petroleum Pty Ltd	0.40			
Vamgas Pty Ltd	8.51			
PPL 123 Cooper/Eromanga Basin	Blocks: -	Sq km: 5	23/09/2019	
<i>Pennie</i>				
Alliance Petroleum Australia Pty Ltd	3.97			
Basin Oil Pty Ltd	2.10			
Bridge Oil Developments Pty Ltd	3.99			
Delhi Petroleum Pty Ltd	20.21			
Novus Australia Resources NL	4.75			
Origin Energy Resources Ltd	13.19			
Reef Oil Pty Ltd	1.97			
Santos (BOL) Pty Ltd	0.21			
Santos Ltd*	40.70			
Santos Petroleum Pty Ltd	0.40			
Vamgas Pty Ltd	8.51			
PPL 124 Cooper/Eromanga Basin	Blocks: -	Sq km: 5	31/12/2018	
<i>Bindah</i>				
Alliance Petroleum Australia Pty Ltd	3.97			
Basin Oil Pty Ltd	2.10			
Bridge Oil Developments Pty Ltd	3.99			
Delhi Petroleum Pty Ltd	20.21			
Novus Australia Resources NL	4.75			
Origin Energy Resources Ltd	13.19			
Reef Oil Pty Ltd	1.97			
Santos (BOL) Pty Ltd	0.21			
Santos Ltd*	40.70			
Santos Petroleum Pty Ltd	0.40			
Vamgas Pty Ltd	8.51			

Title				
<i>Accumulation</i>				
Company (Operator*)	Equity	Expiry Date		
PPL 125 Cooper/Eromanga Basin	Blocks: -	Sq km: 9	11/02/2020	
<i>Gudi</i>				
Alliance Petroleum Australia Pty Ltd	3.97			
Basin Oil Pty Ltd	2.10			
Bridge Oil Developments Pty Ltd	3.99			
Delhi Petroleum Pty Ltd	20.21			
Novus Australia Resources NL	4.75			
Origin Energy Resources Ltd	13.19			
Reef Oil Pty Ltd	1.97			
Santos (BOL) Pty Ltd	0.21			
Santos Ltd*	40.70			
Santos Petroleum Pty Ltd	0.40			
Vamgas Pty Ltd	8.51			
PPL 126 Cooper/Eromanga Basin	Blocks: -	Sq km: 1	21/02/2020	
<i>Daralinge</i>				
Alliance Petroleum Australia Pty Ltd	3.97			
Basin Oil Pty Ltd	2.10			
Bridge Oil Developments Pty Ltd	3.99			
Delhi Petroleum Pty Ltd	20.21			
Novus Australia Resources NL	4.75			
Origin Energy Resources Ltd	13.19			
Reef Oil Pty Ltd	1.97			
Santos (BOL) Pty Ltd	0.21			
Santos Ltd*	40.70			
Santos Petroleum Pty Ltd	0.40			
Vamgas Pty Ltd	8.51			
PPL 127 Cooper/Eromanga Basin	Blocks: -	Sq km: 4	21/02/2020	
<i>Nulla</i>				
Alliance Petroleum Australia Pty Ltd	3.97			
Basin Oil Pty Ltd	2.10			
Bridge Oil Developments Pty Ltd	3.99			
Delhi Petroleum Pty Ltd	20.21			
Novus Australia Resources NL	4.75			
Origin Energy Resources Ltd	13.19			
Reef Oil Pty Ltd	1.97			
Santos (BOL) Pty Ltd	0.21			
Santos Ltd*	40.70			
Santos Petroleum Pty Ltd	0.40			
Vamgas Pty Ltd	8.51			
PPL 128 Cooper/Eromanga Basin	Blocks: -	Sq km: 1	21/02/2020	
<i>Garanjanie</i>				
Alliance Petroleum Australia Pty Ltd	3.97			
Basin Oil Pty Ltd	2.10			
Bridge Oil Developments Pty Ltd	3.99			
Delhi Petroleum Pty Ltd	20.21			
Novus Australia Resources NL	4.75			
Origin Energy Resources Ltd	13.19			
Reef Oil Pty Ltd	1.97			
Santos (BOL) Pty Ltd	0.21			
Santos Ltd*	40.70			
Santos Petroleum Pty Ltd	0.40			
Vamgas Pty Ltd	8.51			
PPL 129 Cooper/Eromanga Basin	Blocks: -	Sq km: 1	20/04/2020	
<i>Thurakinna</i>				
Alliance Petroleum Australia Pty Ltd	3.97			
Basin Oil Pty Ltd	2.10			
Bridge Oil Developments Pty Ltd	3.99			
Delhi Petroleum Pty Ltd	20.21			
Novus Australia Resources NL	4.75			
Origin Energy Resources Ltd	13.19			
Reef Oil Pty Ltd	1.97			
Santos (BOL) Pty Ltd	0.21			
Santos Ltd*	40.70			
Santos Petroleum Pty Ltd	0.40			
Vamgas Pty Ltd	8.51			
PPL 130 Cooper/Eromanga Basin	Blocks: -	Sq km: 1	20/04/2020	
<i>Thurakinna</i>				
Alliance Petroleum Australia Pty Ltd	3.97			
Basin Oil Pty Ltd	2.10			
Bridge Oil Developments Pty Ltd	3.99			
Delhi Petroleum Pty Ltd	20.21			
Novus Australia Resources NL	4.75			
Origin Energy Resources Ltd	13.19			
Reef Oil Pty Ltd	1.97			
Santos (BOL) Pty Ltd	0.21			
Santos Ltd*	40.70			
Santos Petroleum Pty Ltd	0.40			
Vamgas Pty Ltd	8.51			

KEY TO PETROLEUM EXPLORATION AND DEVELOPMENT TITLES

Title				
<i>Accumulation</i>				
Company (Operator*)	Equity	Expiry Date		
PPL 131 Cooper/Eromanga Basin	Blocks: -	Sq km: 40	20/04/2020	
<i>Connatie</i>				
Delhi Petroleum Pty Ltd	17.14			
Novus Australia Resources NL	2.97			
Origin Energy Resources Ltd	10.54			
Santos Ltd*	25.60			
Vamgas Pty Ltd	43.75			
PPL 132 Cooper/Eromanga Basin	Blocks: -	Sq km: 1	31/12/2019	
<i>Packsaddle/Pondrinie</i>				
Alliance Petroleum Australia Pty Ltd	3.97			
Basin Oil Pty Ltd	2.10			
Bridge Oil Developments Pty Ltd	3.99			
Delhi Petroleum Pty Ltd	20.21			
Novus Australia Resources NL	4.75			
Origin Energy Resources Ltd	13.19			
Reef Oil Pty Ltd	1.97			
Santos (BOL) Pty Ltd	0.21			
Santos Ltd*	40.70			
Santos Petroleum Pty Ltd	0.40			
Vamgas Pty Ltd	8.51			
PPL 133 Cooper/Eromanga Basin	Blocks: -	Sq km: 1	31/12/2019	
<i>Packsaddle/Pondrinie</i>				
Alliance Petroleum Australia Pty Ltd	3.97			
Basin Oil Pty Ltd	2.10			
Bridge Oil Developments Pty Ltd	3.99			
Delhi Petroleum Pty Ltd	20.21			
Novus Australia Resources NL	4.75			
Origin Energy Resources Ltd	13.19			
Reef Oil Pty Ltd	1.97			
Santos (BOL) Pty Ltd	0.21			
Santos Ltd*	40.70			
Santos Petroleum Pty Ltd	0.40			
Vamgas Pty Ltd	8.51			
PPL 134 Cooper/Eromanga Basin	Blocks: -	Sq km: 1	31/12/2019	
<i>Packsaddle/Pondrinie</i>				
Alliance Petroleum Australia Pty Ltd	3.97			
Basin Oil Pty Ltd	2.10			
Bridge Oil Developments Pty Ltd	3.99			
Delhi Petroleum Pty Ltd	20.21			
Novus Australia Resources NL	4.75			
Origin Energy Resources Ltd	13.19			
Reef Oil Pty Ltd	1.97			
Santos (BOL) Pty Ltd	0.21			
Santos Ltd*	40.70			
Santos Petroleum Pty Ltd	0.40			
Vamgas Pty Ltd	8.51			
PPL 135 Cooper/Eromanga Basin	Blocks: -	Sq km: 11	31/12/2019	
<i>Goyder</i>				
Alliance Petroleum Australia Pty Ltd	3.97			
Basin Oil Pty Ltd	2.10			
Bridge Oil Developments Pty Ltd	3.99			
Delhi Petroleum Pty Ltd	20.21			
Novus Australia Resources NL	4.75			
Origin Energy Resources Ltd	13.19			
Reef Oil Pty Ltd	1.97			
Santos (BOL) Pty Ltd	0.21			
Santos Ltd*	40.70			
Santos Petroleum Pty Ltd	0.40			
Vamgas Pty Ltd	8.51			
PPL 136 Cooper/Eromanga Basin	Blocks: -	Sq km: 33	17/06/2020	
<i>Cuttapirrie</i>				
Delhi Petroleum Pty Ltd	17.14			
Novus Australia Resources NL	2.97			
Origin Energy Resources Ltd	10.54			
Santos Ltd*	25.60			
Vamgas Pty Ltd	43.75			
PPL 137 Cooper/Eromanga Basin	Blocks: -	Sq km: 7	25/05/2020	
<i>Moonanga</i>				
Alliance Petroleum Australia Pty Ltd	3.97			
Basin Oil Pty Ltd	2.10			
Bridge Oil Developments Pty Ltd	3.99			
Delhi Petroleum Pty Ltd	20.21			
Novus Australia Resources NL	4.75			
Origin Energy Resources Ltd	13.19			
Reef Oil Pty Ltd	1.97			
Santos (BOL) Pty Ltd	0.21			
Santos Ltd*	40.70			
Santos Petroleum Pty Ltd	0.40			
Vamgas Pty Ltd	8.51			

Title				
<i>Accumulation</i>				
Company (Operator*)	Equity	Expiry Date		
PPL 138 Cooper/Eromanga Basin	Blocks: -	Sq km: 25	10/08/2020	
<i>Cabernet</i>				
Alliance Petroleum Australia Pty Ltd	3.97			
Basin Oil Pty Ltd	2.10			
Bridge Oil Developments Pty Ltd	3.99			
Delhi Petroleum Pty Ltd	20.21			
Novus Australia Resources NL	4.75			
Origin Energy Resources Ltd	13.19			
Reef Oil Pty Ltd	1.97			
Santos (BOL) Pty Ltd	0.21			
Santos Ltd*	40.70			
Santos Petroleum Pty Ltd	0.40			
Vamgas Pty Ltd	8.51			
PPL 139 Cooper/Eromanga Basin	Blocks: -	Sq km: 16	31/12/2019	
<i>Milluna</i>				
Alliance Petroleum Australia Pty Ltd	3.97			
Basin Oil Pty Ltd	2.10			
Bridge Oil Developments Pty Ltd	3.99			
Delhi Petroleum Pty Ltd	20.21			
Novus Australia Resources NL	4.75			
Origin Energy Resources Ltd	13.19			
Reef Oil Pty Ltd	1.97			
Santos (BOL) Pty Ltd	0.21			
Santos Ltd*	40.70			
Santos Petroleum Pty Ltd	0.40			
Vamgas Pty Ltd	8.51			
PPL 140 Cooper/Eromanga Basin	Blocks: -	Sq km: 162	31/12/2019	
<i>Nephrite South</i>				
Alliance Petroleum Australia Pty Ltd	3.97			
Basin Oil Pty Ltd	2.10			
Bridge Oil Developments Pty Ltd	3.99			
Delhi Petroleum Pty Ltd	20.21			
Novus Australia Resources NL	4.75			
Origin Energy Resources Ltd	13.19			
Reef Oil Pty Ltd	1.97			
Santos (BOL) Pty Ltd	0.21			
Santos Ltd*	40.70			
Santos Petroleum Pty Ltd	0.40			
Vamgas Pty Ltd	8.51			
PPL 141 Cooper/Eromanga Basin	Blocks: -	Sq km: 125	31/12/2019	
<i>Beckler</i>				
Alliance Petroleum Australia Pty Ltd	3.97			
Basin Oil Pty Ltd	2.10			
Bridge Oil Developments Pty Ltd	3.99			
Delhi Petroleum Pty Ltd	20.21			
Novus Australia Resources NL	4.75			
Origin Energy Resources Ltd	13.19			
Reef Oil Pty Ltd	1.97			
Santos (BOL) Pty Ltd	0.21			
Santos Ltd*	40.70			
Santos Petroleum Pty Ltd	0.40			
Vamgas Pty Ltd	8.51			
PPL 142 Cooper/Eromanga Basin	Blocks: -	Sq km: 28	10/08/2020	
<i>Moolion</i>				
Delhi Petroleum Pty Ltd	17.14			
Novus Australia Resources NL	2.97			
Origin Energy Resources Ltd	10.54			
Santos Ltd*	25.60			
Vamgas Pty Ltd	43.75			
PPL 143 Cooper/Eromanga Basin	Blocks: -	Sq km: 93	31/12/2019	
<i>Doradillo</i>				
Alliance Petroleum Australia Pty Ltd	3.97			
Basin Oil Pty Ltd	2.10			
Bridge Oil Developments Pty Ltd	3.99			
Delhi Petroleum Pty Ltd	20.21			
Novus Australia Resources NL	4.75			
Origin Energy Resources Ltd	13.19			
Reef Oil Pty Ltd	1.97			
Santos (BOL) Pty Ltd	0.21			
Santos Ltd*	40.70			
Santos Petroleum Pty Ltd	0.40			
Vamgas Pty Ltd	8.51			

KEY TO PETROLEUM EXPLORATION AND DEVELOPMENT TITLES

Title				
<i>Accumulation</i>				
Company (Operator*)	Equity	Expiry Date		
PPL 144 Cooper/Eromanga Basin	Blocks: -	Sq km: 7	10/08/2020	
<i>Keena</i>				
Alliance Petroleum Australia Pty Ltd	3.97			
Basin Oil Pty Ltd	2.10			
Bridge Oil Developments Pty Ltd	3.99			
Delhi Petroleum Pty Ltd	20.21			
Novus Australia Resources NL	4.75			
Origin Energy Resources Ltd	13.19			
Reef Oil Pty Ltd	1.97			
Santos (BOL) Pty Ltd	0.21			
Santos Ltd*	40.70			
Santos Petroleum Pty Ltd	0.40			
Vamgas Pty Ltd	8.51			
PPL 145 Cooper/Eromanga Basin	Blocks: -	Sq km: 18	10/08/2020	
<i>Korea, Korea South</i>				
Alliance Petroleum Australia Pty Ltd	3.97			
Basin Oil Pty Ltd	2.10			
Bridge Oil Developments Pty Ltd	3.99			
Delhi Petroleum Pty Ltd	20.21			
Novus Australia Resources NL	4.75			
Origin Energy Resources Ltd	13.19			
Reef Oil Pty Ltd	1.97			
Santos (BOL) Pty Ltd	0.21			
Santos Ltd*	40.70			
Santos Petroleum Pty Ltd	0.40			
Vamgas Pty Ltd	8.51			
PPL 146 Cooper/Eromanga Basin	Blocks: -	Sq km: 10	31/12/2019	
<i>Balcaminga</i>				
Alliance Petroleum Australia Pty Ltd	3.97			
Basin Oil Pty Ltd	2.10			
Bridge Oil Developments Pty Ltd	3.99			
Delhi Petroleum Pty Ltd	20.21			
Novus Australia Resources NL	4.75			
Origin Energy Resources Ltd	13.19			
Reef Oil Pty Ltd	1.97			
Santos (BOL) Pty Ltd	0.21			
Santos Ltd*	40.70			
Santos Petroleum Pty Ltd	0.40			
Vamgas Pty Ltd	8.51			
PPL 147 Cooper/Eromanga Basin	Blocks: -	Sq km: 3	10/08/2020	
<i>Balcaminga</i>				
Delhi Petroleum Pty Ltd	17.14			
Novus Australia Resources NL	2.97			
Origin Energy Resources Ltd	10.54			
Santos Ltd*	25.60			
Vamgas Pty Ltd	43.75			
PPL 148 Cooper/Eromanga Basin	Blocks: -	Sq km: 8	10/08/2020	
<i>Welcome Lake East</i>				
Alliance Petroleum Australia Pty Ltd	3.97			
Basin Oil Pty Ltd	2.10			
Bridge Oil Developments Pty Ltd	3.99			
Delhi Petroleum Pty Ltd	20.21			
Novus Australia Resources NL	4.75			
Origin Energy Resources Ltd	13.19			
Reef Oil Pty Ltd	1.97			
Santos (BOL) Pty Ltd	0.21			
Santos Ltd*	40.70			
Santos Petroleum Pty Ltd	0.40			
Vamgas Pty Ltd	8.51			
PPL 149 Cooper/Eromanga Basin	Blocks: -	Sq km: 33	31/12/2019	
Alliance Petroleum Australia Pty Ltd	3.97			
Basin Oil Pty Ltd	2.10			
Bridge Oil Developments Pty Ltd	3.99			
Delhi Petroleum Pty Ltd	20.21			
Novus Australia Resources NL	4.75			
Origin Energy Resources Ltd	13.19			
Reef Oil Pty Ltd	1.97			
Santos (BOL) Pty Ltd	0.21			
Santos Ltd*	40.70			
Santos Petroleum Pty Ltd	0.40			
Vamgas Pty Ltd	8.51			
PPL 150 Cooper/Eromanga Basin	Blocks: -	Sq km: 22	10/08/2020	
<i>Raven</i>				
Alliance Petroleum Australia Pty Ltd	3.97			
Basin Oil Pty Ltd	2.10			
Bridge Oil Developments Pty Ltd	3.99			
Delhi Petroleum Pty Ltd	20.21			
Novus Australia Resources NL	4.75			
Origin Energy Resources Ltd	13.19			
Reef Oil Pty Ltd	1.97			
Santos (BOL) Pty Ltd	0.21			
Santos Ltd*	40.70			
Santos Petroleum Pty Ltd	0.40			
Vamgas Pty Ltd	8.51			

Title				
<i>Accumulation</i>				
Company (Operator*)	Equity	Expiry Date		
PPL 151 Cooper/Eromanga Basin	Blocks: -	Sq km: 66	31/12/2019	
<i>Napowie</i>				
Alliance Petroleum Australia Pty Ltd	3.97			
Basin Oil Pty Ltd	2.10			
Bridge Oil Developments Pty Ltd	3.99			
Delhi Petroleum Pty Ltd	20.21			
Novus Australia Resources NL	4.75			
Origin Energy Resources Ltd	13.19			
Reef Oil Pty Ltd	1.97			
Santos (BOL) Pty Ltd	0.21			
Santos Ltd*	40.70			
Santos Petroleum Pty Ltd	0.40			
Vamgas Pty Ltd	8.51			
PPL 152 Cooper/Eromanga Basin	Blocks: -	Sq km: 4	10/08/2020	
<i>Napowie</i>				
Delhi Petroleum Pty Ltd	17.14			
Novus Australia Resources NL	2.97			
Origin Energy Resources Ltd	10.54			
Santos Ltd*	25.60			
Vamgas Pty Ltd	43.75			
PPL 153 Cooper/Eromanga Basin	Blocks: -	Sq km: 43	31/12/2019	
<i>Shiraz</i>				
Alliance Petroleum Australia Pty Ltd	3.97			
Basin Oil Pty Ltd	2.10			
Bridge Oil Developments Pty Ltd	3.99			
Delhi Petroleum Pty Ltd	20.21			
Novus Australia Resources NL	4.75			
Origin Energy Resources Ltd	13.19			
Reef Oil Pty Ltd	1.97			
Santos (BOL) Pty Ltd	0.21			
Santos Ltd*	40.70			
Santos Petroleum Pty Ltd	0.40			
Vamgas Pty Ltd	8.51			
PPL 154 Cooper/Eromanga Basin	Blocks: -	Sq km: 4	31/12/2019	
<i>Ficus</i>				
Alliance Petroleum Australia Pty Ltd	3.97			
Basin Oil Pty Ltd	2.10			
Bridge Oil Developments Pty Ltd	3.99			
Delhi Petroleum Pty Ltd	20.21			
Novus Australia Resources NL	4.75			
Origin Energy Resources Ltd	13.19			
Reef Oil Pty Ltd	1.97			
Santos (BOL) Pty Ltd	0.21			
Santos Ltd*	40.70			
Santos Petroleum Pty Ltd	0.40			
Vamgas Pty Ltd	8.51			
PPL 155 Cooper/Eromanga Basin	Blocks: -	Sq km: 9	10/08/2020	
<i>Bunge</i>				
Alliance Petroleum Australia Pty Ltd	3.97			
Basin Oil Pty Ltd	2.10			
Bridge Oil Developments Pty Ltd	3.99			
Delhi Petroleum Pty Ltd	20.21			
Novus Australia Resources NL	4.75			
Origin Energy Resources Ltd	13.19			
Reef Oil Pty Ltd	1.97			
Santos (BOL) Pty Ltd	0.21			
Santos Ltd*	40.70			
Santos Petroleum Pty Ltd	0.40			
Vamgas Pty Ltd	8.51			
PPL 156 Cooper/Eromanga Basin	Blocks: -	Sq km: 35	10/08/2020	
<i>Beanbush</i>				
Delhi Petroleum Pty Ltd	17.14			
Novus Australia Resources NL	2.97			
Origin Energy Resources Ltd	10.54			
Santos Ltd*	25.60			
Vamgas Pty Ltd	43.75			
PPL 157 Cooper/Eromanga Basin	Blocks: -	Sq km: 3	10/08/2020	
<i>Muscat</i>				
Alliance Petroleum Australia Pty Ltd	3.97			
Basin Oil Pty Ltd	2.10			
Bridge Oil Developments Pty Ltd	3.99			
Delhi Petroleum Pty Ltd	20.21			
Novus Australia Resources NL	4.75			
Origin Energy Resources Ltd	13.19			
Reef Oil Pty Ltd	1.97			
Santos (BOL) Pty Ltd	0.21			
Santos Ltd*	40.70			
Santos Petroleum Pty Ltd	0.40			
Vamgas Pty Ltd	8.51			

KEY TO PETROLEUM EXPLORATION AND DEVELOPMENT TITLES

Title				
<i>Accumulation</i>				
Company (Operator*)	Equity	Expiry Date		
PPL 158 Cooper/Eromanga Basin	Blocks: -	Sq km: 67	8/08/2020	
<i>Verona</i>				
Delhi Petroleum Pty Ltd	17.14			
Novus Australia Resources NL	2.97			
Origin Energy Resources Ltd	10.54			
Santos Ltd*	25.60			
Vamgas Pty Ltd	43.75			
PPL 159 Cooper/Eromanga Basin	Blocks: -	Sq km: 4	22/07/2020	
<i>Touriga</i>				
Alliance Petroleum Australia Pty Ltd	3.97			
Basin Oil Pty Ltd	2.10			
Bridge Oil Developments Pty Ltd	3.99			
Delhi Petroleum Pty Ltd	20.21			
Novus Australia Resources NL	4.75			
Origin Energy Resources Ltd	13.19			
Reef Oil Pty Ltd	1.97			
Santos (BOL) Pty Ltd	0.21			
Santos Ltd*	40.70			
Santos Petroleum Pty Ltd	0.40			
Vamgas Pty Ltd	8.51			
PPL 160 Cooper/Eromanga Basin	Blocks: -	Sq km: 3	22/07/2020	
<i>Mica</i>				
Alliance Petroleum Australia Pty Ltd	3.97			
Basin Oil Pty Ltd	2.10			
Bridge Oil Developments Pty Ltd	3.99			
Delhi Petroleum Pty Ltd	20.21			
Novus Australia Resources NL	4.75			
Origin Energy Resources Ltd	13.19			
Reef Oil Pty Ltd	1.97			
Santos (BOL) Pty Ltd	0.21			
Santos Ltd*	40.70			
Santos Petroleum Pty Ltd	0.40			
Vamgas Pty Ltd	8.51			
PPL 161 Cooper/Eromanga Basin	Blocks: -	Sq km: 7	8/08/2020	
<i>Malgona</i>				
Alliance Petroleum Australia Pty Ltd	3.97			
Basin Oil Pty Ltd	2.10			
Bridge Oil Developments Pty Ltd	3.99			
Delhi Petroleum Pty Ltd	20.21			
Novus Australia Resources NL	4.75			
Origin Energy Resources Ltd	13.19			
Reef Oil Pty Ltd	1.97			
Santos (BOL) Pty Ltd	0.21			
Santos Ltd*	40.70			
Santos Petroleum Pty Ltd	0.40			
Vamgas Pty Ltd	8.51			
PPL 162 Cooper/Eromanga Basin	Blocks: -	Sq km: 3	8/08/2020	
<i>Sturt</i>				
Alliance Petroleum Australia Pty Ltd	3.97			
Basin Oil Pty Ltd	2.10			
Bridge Oil Developments Pty Ltd	3.99			
Delhi Petroleum Pty Ltd	20.21			
Novus Australia Resources NL	4.75			
Origin Energy Resources Ltd	13.19			
Reef Oil Pty Ltd	1.97			
Santos (BOL) Pty Ltd	0.21			
Santos Ltd*	40.70			
Santos Petroleum Pty Ltd	0.40			
Vamgas Pty Ltd	8.51			
PPL 163 Cooper/Eromanga Basin	Blocks: -	Sq km: 1	31/12/2019	
<i>Brumby</i>				
Alliance Petroleum Australia Pty Ltd	3.97			
Basin Oil Pty Ltd	2.10			
Bridge Oil Developments Pty Ltd	3.99			
Delhi Petroleum Pty Ltd	20.21			
Novus Australia Resources NL	4.75			
Origin Energy Resources Ltd	13.19			
Reef Oil Pty Ltd	1.97			
Santos (BOL) Pty Ltd	0.21			
Santos Ltd*	40.70			
Santos Petroleum Pty Ltd	0.40			
Vamgas Pty Ltd	8.51			

Title				
<i>Accumulation</i>				
Company (Operator*)	Equity	Expiry Date		
PPL 164 Cooper/Eromanga Basin	Blocks: -	Sq km: 3	31/12/2019	
<i>Packsaddle/Pondrinie</i>				
Alliance Petroleum Australia Pty Ltd	3.97			
Basin Oil Pty Ltd	2.10			
Bridge Oil Developments Pty Ltd	3.99			
Delhi Petroleum Pty Ltd	20.21			
Novus Australia Resources NL	4.75			
Origin Energy Resources Ltd	13.19			
Reef Oil Pty Ltd	1.97			
Santos (BOL) Pty Ltd	0.21			
Santos Ltd*	40.70			
Santos Petroleum Pty Ltd	0.40			
Vamgas Pty Ltd	8.51			
PPL 165 Cooper/Eromanga Basin	Blocks: -	Sq km: 4	26/08/2020	
<i>Malgona</i>				
Alliance Petroleum Australia Pty Ltd	3.97			
Basin Oil Pty Ltd	2.10			
Bridge Oil Developments Pty Ltd	3.99			
Delhi Petroleum Pty Ltd	20.21			
Novus Australia Resources NL	4.75			
Origin Energy Resources Ltd	13.19			
Reef Oil Pty Ltd	1.97			
Santos (BOL) Pty Ltd	0.21			
Santos Ltd*	40.70			
Santos Petroleum Pty Ltd	0.40			
Vamgas Pty Ltd	8.51			
PPL 166 Cooper/Eromanga Basin	Blocks: -	Sq km: 1	31/12/2019	
<i>Taylor South</i>				
Alliance Petroleum Australia Pty Ltd	3.97			
Basin Oil Pty Ltd	2.10			
Bridge Oil Developments Pty Ltd	3.99			
Delhi Petroleum Pty Ltd	20.21			
Novus Australia Resources NL	4.75			
Origin Energy Resources Ltd	13.19			
Reef Oil Pty Ltd	1.97			
Santos (BOL) Pty Ltd	0.21			
Santos Ltd*	40.70			
Santos Petroleum Pty Ltd	0.40			
Vamgas Pty Ltd	8.51			
PPL 167 Cooper/Eromanga Basin	Blocks: -	Sq km: 7	2/09/2020	
<i>Moolion</i>				
Delhi Petroleum Pty Ltd	17.14			
Novus Australia Resources NL	2.97			
Origin Energy Resources Ltd	10.54			
Santos Ltd*	25.60			
Vamgas Pty Ltd	43.75			
PPL 168 Otway Basin	Blocks: -	Sq km: 9	25/06/2020	
<i>Redman</i>				
Omega Oil Pty Ltd	24.30			
Origin Energy Resources Ltd*	20.00			
Sagasco South East Inc.	55.70			
PPL 169 Cooper/Eromanga Basin	Blocks: -	Sq km: 14		
<i>Allambi</i>				
Alliance Petroleum Australia Pty Ltd	3.97			
Basin Oil Pty Ltd	2.10			
Bridge Oil Developments Pty Ltd	3.99			
Delhi Petroleum Pty Ltd	20.21			
Novus Australia Resources NL	4.75			
Reef Oil Pty Ltd	1.97			
Santos Ltd*	40.70			
Santos Petroleum Pty Ltd	0.40			
Vamgas Pty Ltd	8.51			
PPL 170 Cooper/Eromanga Basin	Blocks: -	Sq km: 10		
<i>Andree/Leleptian, Reglet</i>				
Alliance Petroleum Australia Pty Ltd	3.97			
Basin Oil Pty Ltd	2.10			
Bridge Oil Developments Pty Ltd	3.99			
Delhi Petroleum Pty Ltd	20.21			
Novus Australia Resources NL	4.75			
Origin Energy Resources Ltd	13.19			
Reef Oil Pty Ltd	1.97			
Santos (BOL) Pty Ltd	0.21			
Santos Ltd*	40.70			
Santos Petroleum Pty Ltd	0.40			
Vamgas Pty Ltd	8.51			

KEY TO PETROLEUM EXPLORATION AND DEVELOPMENT TITLES

Title			
<i>Accumulation</i>			
Company (Operator*)	Equity	Expiry Date	
PPL 171 Cooper/Eromanga Basin	Blocks: -	Sq km: 24	
<i>Atreides</i>			
Alliance Petroleum Australia Pty Ltd	3.97		
Basin Oil Pty Ltd	2.10		
Bridge Oil Developments Pty Ltd	3.99		
Delhi Petroleum Pty Ltd	20.21		
Novus Australia Resources NL	4.75		
Origin Energy Resources Ltd	13.19		
Reef Oil Pty Ltd	1.97		
Santos (BOL) Pty Ltd	0.21		
Santos Ltd*	40.70		
Santos Petroleum Pty Ltd	0.40		
Vamgas Pty Ltd	8.51		
PPL 172 Cooper/Eromanga Basin	Blocks: -	Sq km: 127	
<i>Yalumba</i>			
Alliance Petroleum Australia Pty Ltd	3.97		
Basin Oil Pty Ltd	2.10		
Bridge Oil Developments Pty Ltd	3.99		
Delhi Petroleum Pty Ltd	20.21		
Novus Australia Resources NL	4.75		
Origin Energy Resources Ltd	13.19		
Reef Oil Pty Ltd	1.97		
Santos (BOL) Pty Ltd	0.21		
Santos Ltd*	40.70		
Santos Petroleum Pty Ltd	0.40		
Vamgas Pty Ltd	8.51		
PPL 173 Cooper/Eromanga Basin	Blocks: -	Sq km: 135	
<i>Boongala, Kerna</i>			
Alliance Petroleum Australia Pty Ltd	3.97		
Basin Oil Pty Ltd	2.10		
Bridge Oil Developments Pty Ltd	3.99		
Delhi Petroleum Pty Ltd	20.21		
Novus Australia Resources NL	4.75		
Origin Energy Resources Ltd	13.19		
Reef Oil Pty Ltd	1.97		
Santos (BOL) Pty Ltd	0.21		
Santos Ltd*	40.70		
Santos Petroleum Pty Ltd	0.40		
Vamgas Pty Ltd	8.51		
PPL 174 Cooper/Eromanga Basin	Blocks: -	Sq km: 13	
<i>Cactus, Deperanie</i>			
Alliance Petroleum Australia Pty Ltd	3.97		
Basin Oil Pty Ltd	2.10		
Bridge Oil Developments Pty Ltd	3.99		
Delhi Petroleum Pty Ltd	20.21		
Novus Australia Resources NL	4.75		
Origin Energy Resources Ltd	13.19		
Reef Oil Pty Ltd	1.97		
Santos (BOL) Pty Ltd	0.21		
Santos Ltd*	40.70		
Santos Petroleum Pty Ltd	0.40		
Vamgas Pty Ltd	8.51		
PPL 175 Cooper/Eromanga Basin	Blocks: -	Sq km: 46	
<i>Caladan North East</i>			
Alliance Petroleum Australia Pty Ltd	3.97		
Basin Oil Pty Ltd	2.10		
Bridge Oil Developments Pty Ltd	3.99		
Delhi Petroleum Pty Ltd	20.21		
Novus Australia Resources NL	4.75		
Origin Energy Resources Ltd	13.19		
Reef Oil Pty Ltd	1.97		
Santos (BOL) Pty Ltd	0.21		
Santos Ltd*	40.70		
Santos Petroleum Pty Ltd	0.40		
Vamgas Pty Ltd	8.51		
PPL 176 Cooper/Eromanga Basin	Blocks: -	Sq km: 8	
<i>Callabonna</i>			
Alliance Petroleum Australia Pty Ltd	3.97		
Basin Oil Pty Ltd	2.10		
Bridge Oil Developments Pty Ltd	3.99		
Delhi Petroleum Pty Ltd	20.21		
Novus Australia Resources NL	4.75		
Origin Energy Resources Ltd	13.19		
Reef Oil Pty Ltd	1.97		
Santos (BOL) Pty Ltd	0.21		
Santos Ltd*	40.70		
Santos Petroleum Pty Ltd	0.40		
Vamgas Pty Ltd	8.51		

Title			
<i>Accumulation</i>			
Company (Operator*)	Equity	Expiry Date	
PPL 177 Cooper/Eromanga Basin	Blocks: -	Sq km: 12	
<i>Charr</i>			
Alliance Petroleum Australia Pty Ltd	3.97		
Basin Oil Pty Ltd	2.10		
Bridge Oil Developments Pty Ltd	3.99		
Delhi Petroleum Pty Ltd	20.21		
Novus Australia Resources NL	4.75		
Origin Energy Resources Ltd	13.19		
Reef Oil Pty Ltd	1.97		
Santos (BOL) Pty Ltd	0.21		
Santos Ltd*	40.70		
Santos Petroleum Pty Ltd	0.40		
Vamgas Pty Ltd	8.51		
PPL 178 Cooper/Eromanga Basin	Blocks: -	Sq km: 9	
<i>Davran</i>			
Alliance Petroleum Australia Pty Ltd	3.97		
Basin Oil Pty Ltd	2.10		
Bridge Oil Developments Pty Ltd	3.99		
Delhi Petroleum Pty Ltd	20.21		
Novus Australia Resources NL	4.75		
Origin Energy Resources Ltd	13.19		
Reef Oil Pty Ltd	1.97		
Santos (BOL) Pty Ltd	0.21		
Santos Ltd*	40.70		
Santos Petroleum Pty Ltd	0.40		
Vamgas Pty Ltd	8.51		
PPL 179 Cooper/Eromanga Basin	Blocks: -	Sq km: 6	
<i>Fortanna</i>			
Alliance Petroleum Australia Pty Ltd	3.97		
Basin Oil Pty Ltd	2.10		
Bridge Oil Developments Pty Ltd	3.99		
Delhi Petroleum Pty Ltd	20.21		
Novus Australia Resources NL	4.75		
Origin Energy Resources Ltd	13.19		
Reef Oil Pty Ltd	1.97		
Santos (BOL) Pty Ltd	0.21		
Santos Ltd*	40.70		
Santos Petroleum Pty Ltd	0.40		
Vamgas Pty Ltd	8.51		
PPL 180 Cooper/Eromanga Basin	Blocks: -	Sq km: 4	
<i>Gooranie</i>			
Alliance Petroleum Australia Pty Ltd	3.97		
Basin Oil Pty Ltd	2.10		
Bridge Oil Developments Pty Ltd	3.99		
Delhi Petroleum Pty Ltd	20.21		
Novus Australia Resources NL	4.75		
Origin Energy Resources Ltd	13.19		
Reef Oil Pty Ltd	1.97		
Santos (BOL) Pty Ltd	0.21		
Santos Ltd*	40.70		
Santos Petroleum Pty Ltd	0.40		
Vamgas Pty Ltd	8.51		
PPL 181 Cooper/Eromanga Basin	Blocks: -	Sq km: 18	
<i>Grenache</i>			
Alliance Petroleum Australia Pty Ltd	3.97		
Basin Oil Pty Ltd	2.10		
Bridge Oil Developments Pty Ltd	3.99		
Delhi Petroleum Pty Ltd	20.21		
Novus Australia Resources NL	4.75		
Origin Energy Resources Ltd	13.19		
Reef Oil Pty Ltd	1.97		
Santos (BOL) Pty Ltd	0.21		
Santos Ltd*	40.70		
Santos Petroleum Pty Ltd	0.40		
Vamgas Pty Ltd	8.51		
PPL 182 Cooper/Eromanga Basin	Blocks: -	Sq km: 3	
<i>James</i>			
Delhi Petroleum Pty Ltd	17.14		
Novus Australia Resources NL	2.97		
Origin Energy Resources Ltd	10.54		
Santos Ltd*	25.60		
Vamgas Pty Ltd	43.75		

KEY TO PETROLEUM EXPLORATION AND DEVELOPMENT TITLES

Title			
<i>Accumulation</i>			
Company (Operator*)	Equity	Expiry Date	
PPL 183 Cooper/Eromanga Basin	Blocks: -	Sq km: 15	
<i>Kanowana</i>			
Alliance Petroleum Australia Pty Ltd	3.97		
Basin Oil Pty Ltd	2.10		
Bridge Oil Developments Pty Ltd	3.99		
Delhi Petroleum Pty Ltd	20.21		
Novus Australia Resources NL	4.75		
Origin Energy Resources Ltd	13.19		
Reef Oil Pty Ltd	1.97		
Santos (BOL) Pty Ltd	0.21		
Santos Ltd*	40.70		
Santos Petroleum Pty Ltd	0.40		
Vamgas Pty Ltd	8.51		
PPL 184 Cooper/Eromanga Basin	Blocks: -	Sq km: 2	
<i>Kerinna</i>			
Alliance Petroleum Australia Pty Ltd	3.97		
Basin Oil Pty Ltd	2.10		
Bridge Oil Developments Pty Ltd	3.99		
Delhi Petroleum Pty Ltd	20.21		
Novus Australia Resources NL	4.75		
Origin Energy Resources Ltd	13.19		
Reef Oil Pty Ltd	1.97		
Santos (BOL) Pty Ltd	0.21		
Santos Ltd*	40.70		
Santos Petroleum Pty Ltd	0.40		
Vamgas Pty Ltd	8.51		
PPL 185 Cooper/Eromanga Basin	Blocks: -	Sq km: 34	
<i>Kirralie</i>			
Alliance Petroleum Australia Pty Ltd	3.97		
Basin Oil Pty Ltd	2.10		
Bridge Oil Developments Pty Ltd	3.99		
Delhi Petroleum Pty Ltd	20.21		
Novus Australia Resources NL	4.75		
Origin Energy Resources Ltd	13.19		
Reef Oil Pty Ltd	1.97		
Santos (BOL) Pty Ltd	0.21		
Santos Ltd*	40.70		
Santos Petroleum Pty Ltd	0.40		
Vamgas Pty Ltd	8.51		
PPL 186 Cooper/Eromanga Basin	Blocks: -	Sq km: 21	
<i>Kobari</i>			
Alliance Petroleum Australia Pty Ltd	3.97		
Basin Oil Pty Ltd	2.10		
Bridge Oil Developments Pty Ltd	3.99		
Delhi Petroleum Pty Ltd	20.21		
Novus Australia Resources NL	4.75		
Origin Energy Resources Ltd	13.19		
Reef Oil Pty Ltd	1.97		
Santos (BOL) Pty Ltd	0.21		
Santos Ltd*	40.70		
Santos Petroleum Pty Ltd	0.40		
Vamgas Pty Ltd	8.51		
PPL 187 Cooper/Eromanga Basin	Blocks: -	Sq km: 17	
<i>Lamdina</i>			
Delhi Petroleum Pty Ltd	17.14		
Novus Australia Resources NL	2.97		
Origin Energy Resources Ltd	10.54		
Santos Ltd*	25.60		
Vamgas Pty Ltd	43.75		
PPL 188 Cooper/Eromanga Basin	Blocks: -	Sq km: 16	
<i>McKinlay</i>			
Alliance Petroleum Australia Pty Ltd	3.97		
Basin Oil Pty Ltd	2.10		
Bridge Oil Developments Pty Ltd	3.99		
Delhi Petroleum Pty Ltd	20.21		
Novus Australia Resources NL	4.75		
Origin Energy Resources Ltd	13.19		
Reef Oil Pty Ltd	1.97		
Santos (BOL) Pty Ltd	0.21		
Santos Ltd*	40.70		
Santos Petroleum Pty Ltd	0.40		
Vamgas Pty Ltd	8.51		

Title			
<i>Accumulation</i>			
Company (Operator*)	Equity	Expiry Date	
PPL 189 Cooper/Eromanga Basin	Blocks: -	Sq km: 260	
<i>Allunga, Bauhaus</i>			
Alliance Petroleum Australia Pty Ltd	3.97		
Basin Oil Pty Ltd	2.10		
Bridge Oil Developments Pty Ltd	3.99		
Delhi Petroleum Pty Ltd	20.21		
Novus Australia Resources NL	4.75		
Origin Energy Resources Ltd	13.19		
Reef Oil Pty Ltd	1.97		
Santos (BOL) Pty Ltd	0.21		
Santos Ltd*	40.70		
Santos Petroleum Pty Ltd	0.40		
Vamgas Pty Ltd	8.51		
PPL 190 Cooper/Eromanga Basin	Blocks: -	Sq km: 232	
<i>Big Lake, Boobook, Merlot</i>			
Alliance Petroleum Australia Pty Ltd	3.97		
Basin Oil Pty Ltd	2.10		
Bridge Oil Developments Pty Ltd	3.99		
Delhi Petroleum Pty Ltd	20.21		
Novus Australia Resources NL	4.75		
Origin Energy Resources Ltd	13.19		
Reef Oil Pty Ltd	1.97		
Santos (BOL) Pty Ltd	0.21		
Santos Ltd*	40.70		
Santos Petroleum Pty Ltd	0.40		
Vamgas Pty Ltd	8.51		
PPL 191 Cooper/Eromanga Basin	Blocks: -	Sq km: 10	
<i>Moondie</i>			
Delhi Petroleum Pty Ltd	17.14		
Novus Australia Resources NL	2.97		
Origin Energy Resources Ltd	10.54		
Santos Ltd*	25.60		
Vamgas Pty Ltd	43.75		
PPL 192 Cooper/Eromanga Basin	Blocks: -	Sq km: 23	
<i>Haloragis, Pirraminta</i>			
Alliance Petroleum Australia Pty Ltd	3.97		
Basin Oil Pty Ltd	2.10		
Bridge Oil Developments Pty Ltd	3.99		
Delhi Petroleum Pty Ltd	20.21		
Novus Australia Resources NL	4.75		
Origin Energy Resources Ltd	13.19		
Reef Oil Pty Ltd	1.97		
Santos (BOL) Pty Ltd	0.21		
Santos Ltd*	40.70		
Santos Petroleum Pty Ltd	0.40		
Vamgas Pty Ltd	8.51		
PPL 193 Cooper/Eromanga Basin	Blocks: -	Sq km: 10	
<i>Quartpot</i>			
Alliance Petroleum Australia Pty Ltd	3.97		
Basin Oil Pty Ltd	2.10		
Bridge Oil Developments Pty Ltd	3.99		
Delhi Petroleum Pty Ltd	20.21		
Novus Australia Resources NL	4.75		
Origin Energy Resources Ltd	13.19		
Reef Oil Pty Ltd	1.97		
Santos (BOL) Pty Ltd	0.21		
Santos Ltd*	40.70		
Santos Petroleum Pty Ltd	0.40		
Vamgas Pty Ltd	8.51		
PPL 194 Cooper/Eromanga Basin	Blocks: -	Sq km: 6	
<i>Reg, Sprigg</i>			
Delhi Petroleum Pty Ltd	17.14		
Novus Australia Resources NL	2.97		
Origin Energy Resources Ltd	10.54		
Santos Ltd*	25.60		
Vamgas Pty Ltd	43.75		
PPL 195 Cooper/Eromanga Basin	Blocks: -	Sq km: 8	
<i>Scrubby Creek</i>			
Alliance Petroleum Australia Pty Ltd	3.97		
Basin Oil Pty Ltd	2.10		
Bridge Oil Developments Pty Ltd	3.99		
Delhi Petroleum Pty Ltd	20.21		
Novus Australia Resources NL	4.75		
Origin Energy Resources Ltd	13.19		
Reef Oil Pty Ltd	1.97		
Santos (BOL) Pty Ltd	0.21		
Santos Ltd*	40.70		
Santos Petroleum Pty Ltd	0.40		
Vamgas Pty Ltd	8.51		

KEY TO PETROLEUM EXPLORATION AND DEVELOPMENT TITLES

Title				
Accumulation				
Company (Operator*)	Equity	Expiry Date		
PPL 196 Cooper/Eromanga Basin	Blocks: -	Sq km: 111		
<i>Moorari/Woolkina, Tirrawarra</i>				
Alliance Petroleum Australia Pty Ltd	3.97			
Basin Oil Pty Ltd	2.10			
Bridge Oil Developments Pty Ltd	3.99			
Delhi Petroleum Pty Ltd	20.21			
Novus Australia Resources NL	4.75			
Origin Energy Resources Ltd	13.19			
Reef Oil Pty Ltd	1.97			
Santos (BOL) Pty Ltd	0.21			
Santos Ltd*	40.70			
Santos Petroleum Pty Ltd	0.40			
Vamgas Pty Ltd	8.51			
PPL 197 Cooper/Eromanga Basin	Blocks: -	Sq km: 3		
<i>Moorari/Woolkina, Tirrawarra</i>				
Delhi Petroleum Pty Ltd	17.14			
Novus Australia Resources NL	2.97			
Origin Energy Resources Ltd	10.54			
Santos Ltd*	25.60			
Vamgas Pty Ltd	43.75			
PPL 198 Cooper/Eromanga Basin	Blocks: -	Sq km: 25		
<i>Wilpinnie</i>				
Alliance Petroleum Australia Pty Ltd	3.97			
Basin Oil Pty Ltd	2.10			
Bridge Oil Developments Pty Ltd	3.99			
Delhi Petroleum Pty Ltd	20.21			
Novus Australia Resources NL	4.75			
Origin Energy Resources Ltd	13.19			
Reef Oil Pty Ltd	1.97			
Santos (BOL) Pty Ltd	0.21			
Santos Ltd*	40.70			
Santos Petroleum Pty Ltd	0.40			
Vamgas Pty Ltd	8.51			
PPL 199 Cooper/Eromanga Basin	Blocks: -	Sq km: 13		
<i>Wooloo</i>				
Alliance Petroleum Australia Pty Ltd	3.97			
Basin Oil Pty Ltd	2.10			
Bridge Oil Developments Pty Ltd	3.99			
Delhi Petroleum Pty Ltd	20.21			
Novus Australia Resources NL	4.75			
Origin Energy Resources Ltd	13.19			
Reef Oil Pty Ltd	1.97			
Santos (BOL) Pty Ltd	0.21			
Santos Ltd*	40.70			
Santos Petroleum Pty Ltd	0.40			
Vamgas Pty Ltd	8.51			
PPL 202 Otway Basin	Blocks: -	Sq km: 2		
<i>Haselgrove, Ladbroke Grove</i>				
Omega Oil Pty Ltd	24.29			
Origin Energy Resources Ltd*	20.00			
Sagasco South East Inc.	55.71			
PPL 203 Cooper/Eromanga Basin	Blocks: -	Sq km: 2		
<i>Acrasia</i>				
Mawson Petroleum Pty Ltd	25.00			
Stuart Petroleum Ltd*	75.00			
PPL 204 Cooper/Eromanga Basin	Blocks: -	Sq km: 2		
<i>Sellicks</i>				
Beach Petroleum Ltd*	75.00			
Cooper Energy NL	25.00			
PPL 205 Cooper/Eromanga Basin	Blocks: -	Sq km: 3		
Beach Petroleum Ltd*	75.00			
Cooper Energy NL	25.00			
PPL 206 Cooper/Eromanga Basin	Blocks: -	Sq km: 1		
Santos Ltd*	100.00			
PPL 207 Cooper/Eromanga Basin	Blocks: -	Sq km: 6		
Cooper Energy NL	30.00			
Stuart Petroleum Ltd*	70.00			
PPL 208 Cooper/Eromanga Basin	Blocks: -	Sq km: 0		
Stuart Petroleum Ltd*	100.00			
PPL 210 Cooper/Eromanga Basin	Blocks: -	Sq km: 4		
Beach Petroleum Ltd*	50.00			
Magellan Petroleum (NT) Pty Ltd	50.00			
Retention Lease Sq km approximate				
PRL 1 Otway Basin	Blocks: -	Sq km: 4	9/01/2010	
Origin Energy Resources Ltd*	0.00			
Sagasco South East Inc.	100.00			
Offshore				
Exploration Permit Sq km approximate				
EPP 27 Otway Basin	Blocks: 67	Sq km: 3,962	24/08/2005	
Great Artesian Oil and Gas Ltd*	100.00			

Title				
Accumulation				
Company (Operator*)	Equity	Expiry Date		
EPP 28 Great Australian Bight Basin	Blocks: 225	Sq km: 15,896	11/07/2006	
Anadarko Australia Company Pty Ltd	30.00			
Woodside Energy Ltd*	70.00			
EPP 29 Great Australian Bight Basin	Blocks: 268	Sq km: 18,763	11/07/2006	
Anadarko Australia Company Pty Ltd	30.00			
Woodside Energy Ltd*	70.00			
EPP 30 Great Australian Bight Basin	Blocks: 318	Sq km: 22,225	11/07/2006	
Anadarko Australia Company Pty Ltd	30.00			
Woodside Energy Ltd*	70.00			
EPP 31 Duntroon Basin	Blocks: 80	Sq km: 5,592	26/06/2008	
Anadarko Australia Company Pty Ltd	30.00			
Woodside Energy Ltd*	70.00			
EPP 32 Great Australian Bight Basin	Blocks: 76	Sq km: 5,300	12/12/2008	
Santos Offshore Pty Ltd*	100.00			
EPP 33 Great Australian Bight Basin	Blocks: 80	Sq km: 5,451	18/12/2009	
Kerr-McGee Australia Exploration and Production Pty Ltd	50.00			
Kerr-McGee North West Shelf Australia Energy Pty Ltd*	50.00			
EPP 34 Otway Basin	Blocks: 76	Sq km: 5,320	24/03/2010	
National Energy Pty Ltd	25.00			
Otway Oil and Gas Pty Ltd	25.00			
United Oil and Gas Pty Ltd*	50.00			

Western Australia

Onshore

Exploration Permit

Sq km approximate

EP 23 R6 Perth Basin	Blocks: 9	Sq km: 697	9/06/2007	
Ausam Resources NL*	100.00			
EP 61 R6 Carnarvon Basin	Blocks: 4	Sq km: 310	11/12/2007	
<i>Pasov</i>				
ChevronTexaco Australia Pty Ltd*				
Mobil Australia Resources Company Pty Ltd				
Santos Offshore Pty Ltd				
Texaco Australia Pty Ltd				
EP 62 R6 Carnarvon Basin	Blocks: 1	Sq km: 77	28/10/2008	
ChevronTexaco Australia Pty Ltd*				
Mobil Australia Resources Company Pty Ltd				
Santos Offshore Pty Ltd				
Texaco Australia Pty Ltd				
EP 104 R4 Canning Basin	Blocks: 12	Sq km: 996	3/04/2005	
First Australian Resources Limited				
Gulliver Productions Pty Ltd*				
Indigo Oil Pty Ltd				
Kimberley Oil NL				
Pan Continental Oil and Gas NL				
Pelsoil Ltd				
Voyager (PB) Ltd				
EP 110 R4 Carnarvon Basin	Blocks: 9	Sq km: 691	23/01/2006	
Carnarvon Petroleum NL*				
Euro Pacific Energy Pty Ltd				
Hardman Oil and Gas Pty Ltd				
Pan Pacific Petroleum (South Australia) Pty Ltd				
Radford, Roy Antony				
EP 129 R4 Canning Basin	Blocks: 9	Sq km: 735	8/07/2006	
Terratek Drilling Tools Pty Ltd*	100.00			
EP 137 R4 Carnarvon Basin	Blocks: 9	Sq km: 1,360	22/05/2005	
<i>Bandar, Carnie, East Somelmin, Mardie, Myanore, Phantom, Thringa, Windoo</i>				
Tap (Shelfal) Pty Ltd*	100.00			
EP 307 R3 Carnarvon Basin	Blocks: 4	Sq km: 161	17/09/2005	
<i>Tanami</i>				
Apache Northwest Pty Ltd				
Kufpec Australia Pty Ltd				
Tap (Harriet) Pty Ltd				
EP 320 R3 Perth Basin	Blocks: 16	Sq km: 1,316	23/07/2007	
AWE (Perth Basin) Ltd				
Origin Energy Developments Pty Ltd				
EP 321 R3 Perth Basin	Blocks: 16	Sq km: 1,080	5/04/2009	
Ausam Resources NL*				
Capital Consultant Services Pty Ltd				
EP 357 R2 Carnarvon Basin	Blocks: 3	Sq km: 232	29/04/2007	
ChevronTexaco Australia Pty Ltd*				
Mobil Australia Resources Company Pty Ltd				
Santos Offshore Pty Ltd				
Texaco Australia Pty Ltd				

KEY TO PETROLEUM EXPLORATION AND DEVELOPMENT TITLES

Title				
<i>Accumulation</i>				
Company (Operator*)		Equity		Expiry Date
EP 358 R1	Carnarvon Basin	Blocks: 5	Sq km: 387	
<i>Flag</i>				
Apache Northwest Pty Ltd*				
Kufpec Australia Pty Ltd				
Tap (Harriet) Pty Ltd				
EP 359 R1	Carnarvon Basin	Blocks: 21	Sq km: 1,626	
<i>Leamonth</i>				
Lansvale Oil and Gas Pty Ltd*				
Pace Petroleum Pty Ltd				
Rough Range Oil Pty Ltd				
Sun Resources NL				
EP 368 R2	Perth Basin	Blocks: 8	Sq km: 619	10/02/2008
Arc Energy NL*				
Hardman Oil and Gas Pty Ltd				
Origin Energy Developments Pty Ltd				
Voyager (PB) Ltd				
EP 369 R2	Carnarvon Basin	Blocks: 21	Sq km: 1,626	25/03/2009
Longreach Oil Ltd*				
EP 371 R1	Canning Basin	Blocks: 45	Sq km: 3,675	4/05/2005
Kimberley Oil NL*				
EP 374 R1	Canning Basin	Blocks: 100	Sq km: 7,744	18/11/2005
Nerdlihc Company Inc*				
EP 375 R1	Canning Basin	Blocks: 100	Sq km: 7,744	18/11/2005
Nerdlihc Company Inc*				
EP 376 R1	Canning Basin	Blocks: 100	Sq km: 7,744	18/11/2005
Nerdlihc Company Inc*				
EP 380 R2	Bangemall Basin	Blocks: 100	Sq km: 7,743	18/07/2009
Amadeus Energy Limited*				
Jagen Nominees Pty Ltd				
EP 381 R2	Perth Basin	Blocks: 21	Sq km: 1,417	14/06/2009
Geopetro Resources Company				
Southern Amity Inc*				
EP 386 R2	Bonaparte Basin	Blocks: 61	Sq km: 5,063	14/10/2009
<i>Bonaparte, Garimala, Ningbing, Waggon Creek</i>				
Kimberly Energy Group Pty Ltd*				
EP 389 R1	Perth Basin	Blocks: 28	Sq km: 2,052	24/09/2005
Empire Oil Company (WA) Ltd*				
EP 390 R1	Canning Basin	Blocks: 65	Sq km: 5,259	28/06/2006
Kimberley Oil NL*				
EP 391 R1	Canning Basin	Blocks: 59	Sq km: 4,796	28/06/2006
Kimberley Oil NL*				
EP 405 R1	Carnarvon Basin	Blocks: 56	Sq km: 4,525	25/03/2009
Longreach Oil Ltd*				
EP 407 R1	Perth Basin	Blocks: 26	Sq km: 1,755	13/04/2009
Ausam Resources NL*				
Capital Consultant Services Pty Ltd				
EP 408 R1	Perth Basin	Blocks: 13	Sq km: 878	28/07/2008
Geopetro Resources Company				
Korea National Oil Corporation				
SCGAU Pty Ltd				
Southern Amity Inc*				
EP 410 R1	Carnarvon Basin	Blocks: 20	Sq km: 1,549	25/03/2009
Longreach Oil Ltd*				
EP 412 R2	Carnarvon Basin	Blocks: 34	Sq km: 2,633	30/01/2010
Bounty Oil and Gas NL				
Rough Range Oil Pty Ltd*				
EP 413 R2	Perth Basin	Blocks: 11	Sq km: 852	1/02/2010
Arc Energy NL				
Geary, John Kevin				
Hardman Oil and Gas Pty Ltd				
Norwest Energy NL				
Origin Energy Developments Pty Ltd*				
ROC Oil WA Pty Ltd				
Victoria Petroleum Offshore Pty Ltd				
Voyager (PB) Ltd				
EP 415	Perth Basin	Blocks: 21	Sq km: 1,417	25/08/2005
Empire Oil Company (WA) Ltd*				
EP 416	Perth Basin	Blocks: 57	Sq km: 3,847	25/08/2005
Empire Oil Company (WA) Ltd*				
EP 417	Canning Basin	Blocks: 78	Sq km: 6,475	21/02/2006
New Standard Exploration NL*				

Title				
<i>Accumulation</i>				
Company (Operator*)		Equity		Expiry Date
EP 419	Perth Basin	Blocks: 9	Sq km: 607	18/10/2006
Black Rock Resources Australia, NL*				
Norwest Energy NL				
EP 422	Canning Basin	Blocks: 147	Sq km: 1,138	21/03/2008
Ausoil Exploration Pty Ltd*				
EP 424	Carnarvon Basin	Blocks: 1	Sq km: 77	13/04/2010
Strike Oil NL*				
EP 425	Perth Basin	Blocks: 21	Sq km: 1,416	16/06/2010
Antares Energy Limited*				
EP 426	Perth Basin	Blocks: 32	Sq km: 2,158	15/07/2010
Gulliver Productions Pty Ltd*				
EP 427	Perth Basin	Blocks: 18	Sq km: 1,360	18/07/2010
Grange Court Pty Ltd				
Victoria Diamond Exploration Pty Ltd*				
EP 428	Canning Basin	Blocks: 94	Sq km: 7,674	1/08/2010
Otto Oil Pty Ltd*				
EP 429	Canning Basin	Blocks: 25	Sq km: 2,015	5/09/2010
Kingsway Resources 2001 Pty Ltd*				
EP 430	Perth Basin	Blocks: 64	Sq km: 4,731	19/09/2010
Empire Oil Company (WA) Ltd*				
EP 431	Canning Basin	Blocks: 52	Sq km: 4,211	6/10/2010
Kimberley Oil NL*				
EP 432	Perth Basin	Blocks: 27	Sq km: 1,996	10/10/2010
Gulliver Productions Pty Ltd*				
EP 433	Carnarvon Basin	Blocks: 2	Sq km: 159	13/05/2008
Lansvale Oil and Gas Pty Ltd*				
Pace Petroleum Pty Ltd				
Rough Range Oil Pty Ltd				
EP 434	Carnarvon Basin	Blocks: 3	Sq km: 237	13/05/2008
Lansvale Oil and Gas Pty Ltd*				
Pace Petroleum Pty Ltd				
Rough Range Oil Pty Ltd				
EP 435	Carnarvon Basin	Blocks: 4	Sq km: 317	13/05/2008
Lansvale Oil and Gas Pty Ltd*				
Pace Petroleum Pty Ltd				
Rough Range Oil Pty Ltd				
EP 436	Canning Basin	Blocks: 35	Sq km: 2,813	1/11/2010
Otto Oil Pty Ltd*				
EP 437	Perth Basin	Blocks: 26	Sq km: 1,589	7/11/2010
Arc Energy NL*				
CalEnergy Gas (Australia) Ltd				
Westranch Holdings Pty Ltd				
EP 438	Canning Basin	Blocks: 73	Sq km: 5,511	22/12/2010
Gulliver Productions Pty Ltd*				
Indigo Oil Pty Ltd				
Maneroo Oil Company Ltd				
EP 439	Carnarvon Basin	Blocks: 95	Sq km: 7,174	1/02/2011
Empire Oil Company (WA) Ltd*				
Euro Pacific Energy Pty Ltd				
Falcore Pty Ltd				
Gulliver Productions Pty Ltd				
Indigo Oil Pty Ltd				
Vigilant Oil Pty Ltd				
<i>Production Licence</i>			Sq km approximate	
L 1 R1	Perth Basin	Blocks: 5	Sq km: 387	17/05/2014
<i>Dongara</i>				
Arc Energy NL*				
Origin Energy Developments Pty Ltd				
L 1H R1	Carnarvon Basin	Blocks: 9	Sq km: 697	9/02/2009
<i>Barrow Island</i>				
ChevronTexaco Australia Pty Ltd*				
Mobil Australia Resources Company Pty Ltd				
Santos Offshore Pty Ltd				
Texaco Australia Pty Ltd				
L 2 R1	Perth Basin	Blocks: 4	Sq km: 310	17/05/2014
<i>Dongara</i>				
Arc Energy NL*				
Origin Energy Developments Pty Ltd				
L 4	Perth Basin	Blocks: 5	Sq km: 387	
<i>Woodada</i>				
Bounty Oil and Gas NL				
Hardman Oil and Gas Pty Ltd*				

KEY TO PETROLEUM EXPLORATION AND DEVELOPMENT TITLES

Title				
Accumulation				
Company (Operator*)		Equity		Expiry Date
L 5	Perth Basin	Blocks: 4	Sq km: 310	
<i>Woodada</i>				
Bounty Oil and Gas NL				
Hardman Oil and Gas Pty Ltd*				
L 6	Canning Basin	Blocks: 5	Sq km: 415	
<i>Blina</i>				
Terratek Drilling Tools Pty Ltd*				
			100.00	
L 7	Perth Basin	Blocks: 2	Sq km: 155	13/05/2005
<i>Mount Horner</i>				
Arc Energy NL*				
			100.00	
L 8	Canning Basin	Blocks: 4	Sq km: 332	21/10/2005
<i>Sundown, West Terrace</i>				
Terratek Drilling Tools Pty Ltd*				
			100.00	
L 9	Carnarvon Basin	Blocks: 3	Sq km: 232	3/06/2008
<i>Tubridgi</i>				
Origin Energy Amadeus NL				
Origin Energy Petroleum Pty Ltd				
Pan Pacific Petroleum NL				
Sagasco South East Inc.*				
Tubridgi Petroleum Pty Ltd				
L 10	Carnarvon Basin	Blocks: 8	Sq km: 619	3/02/2009
<i>Barrow Island</i>				
ChevronTexaco Australia Pty Ltd*				
Mobil Australia Resources Company Pty Ltd				
Santos Offshore Pty Ltd				
Texaco Australia Pty Ltd				
L 11	Perth Basin	Blocks: 1	Sq km: 77	14/05/2013
<i>Beharra Springs</i>				
AWE (Perth Basin) Ltd				
Origin Energy Developments Pty Ltd*				
L 12	Carnarvon Basin	Blocks: -	Sq km: 3	28/07/2023
<i>Crest</i>				
ChevronTexaco Australia Pty Ltd*				
Mobil Australia Resources Company Pty Ltd				
Santos Offshore Pty Ltd				
Texaco Australia Pty Ltd				
L 13	Carnarvon Basin	Blocks: -	Sq km: 3	28/07/2023
ChevronTexaco Australia Pty Ltd*				
Mobil Australia Resources Company Pty Ltd				
Santos Offshore Pty Ltd				
Texaco Australia Pty Ltd				
L 14	Perth Basin	Blocks: 1	Sq km: 40	20/06/2025
Arc Energy NL				
Geary, John Kevin				
Hardman Oil and Gas Pty Ltd				
Norwest Energy NL				
Origin Energy Developments Pty Ltd*				
ROC Oil WA Pty Ltd				
Victoria Petroleum Offshore Pty Ltd				
Voyager (PB) Ltd				
Retention Lease				
			Sq km approximate	
RL 1	Canning Basin	Blocks: 3	Sq km: 222	28/08/2008
First Australian Resources Limited				
Gulliver Productions Pty Ltd*				
Indigo Oil Pty Ltd				
Kimberley Oil NL				
Pan Continental Oil and Gas NL				
Pelsoil Ltd				
Voyager (PB) Ltd				
RL 2	Browse Basin	Blocks: 1	Sq km: 74	29/12/2008
BHP Billiton Petroleum (North West Shelf) Pty Ltd				
BP Developments Australia Pty Ltd				
ChevronTexaco Australia Pty Ltd				
Shell Development (Australia) Pty Ltd				
Woodside Energy Ltd*				
Offshore				
Exploration Permit				
			Sq km approximate	
WA-1-P R6	Carnarvon Basin	Blocks: 15	Sq km: 1,328	16/11/2007
<i>Corvus, Forestier, Rosemary, Saffron</i>				
Apache Northwest Pty Ltd				
			31.50	
Santos Ltd				
			22.56	
Woodside Energy Ltd*				
			45.94	
WA-18-P R6	Bonaparte Basin	Blocks: 4	Sq km: 332	29/11/2009
Bonaparte Gas and Oil Pty Ltd				
			30.00	
Santos Ltd				
			62.50	
Santos Offshore Pty Ltd				
			7.50	

Title				
Accumulation				
Company (Operator*)		Equity		Expiry Date
WA-28-P R6	Carnarvon Basin	Blocks: 14	Sq km: 1,245	13/02/2007
<i>Eaglehawk, Haycock, Lynx, North Rankin</i>				
BHP Billiton Petroleum (North West Shelf) Pty Ltd				
			16.67	
BP Developments Australia Pty Ltd				
			16.67	
ChevronTexaco Australia Pty Ltd				
			16.67	
Japan Australia LNG (MIMI) Pty Ltd				
			16.67	
Shell Development (Australia) Pty Ltd				
			16.67	
Woodside Energy Ltd*				
WA-155-P R4	Carnarvon Basin	Blocks: 13	Sq km: 954	23/02/2009
<i>Langdale, Nimrod, Novara, Outtrim, Ravensworth, Scafell, Vincent</i>				
Apache Northwest Pty Ltd				
			31.50	
BHP Billiton Petroleum (Australia) Pty Ltd*				
			40.00	
Inpex Alpha Ltd				
			28.50	
WA-191-P R4	Carnarvon Basin	Blocks: 13	Sq km: 969	17/08/2009
Kufpec Australia Pty Ltd				
			33.40	
Nippon Oil Exploration (Dampier) Pty Ltd				
			25.00	
Santos Ltd*				
			33.40	
Woodside Energy Ltd				
			8.20	
WA-192-P R4	Carnarvon Basin	Blocks: 12	Sq km: 862	30/08/2009
Apache Harriet Pty Ltd				
			25.00	
Apache Northwest Pty Ltd				
			39.51	
Kufpec Australia Pty Ltd				
			21.72	
Tap (Harriet) Pty Ltd*				
			13.77	
WA-202-P R2	Carnarvon Basin	Blocks: 13	Sq km: 1,079	28/06/2005
<i>Cherring, Hampton</i>				
Apache Northwest Pty Ltd*				
			50.00	
AWE Petroleum Pty Ltd				
			10.00	
Wandoo Petroleum Pty Ltd				
			40.00	
WA-205-P R2	Carnarvon Basin	Blocks: 14	Sq km: 945	3/12/2005
ChevronTexaco Australia Pty Ltd*				
			28.57	
Mobil Australia Resources Company Pty Ltd				
			14.29	
Shell Development (Australia) Pty Ltd				
			28.57	
Texaco Australia Pty Ltd				
			28.57	
WA-208-P R2	Carnarvon Basin	Blocks: 16	Sq km: 1,328	3/06/2007
<i>Hurricane</i>				
Eni (Australia) Pty Ltd				
			18.66	
Mosaic Oil NL				
			7.46	
Santos Offshore Pty Ltd				
			29.85	
Woodside Energy Ltd*				
			44.03	
WA-209-P R2	Carnarvon Basin	Blocks: 12	Sq km: 810	9/11/2005
<i>Elk, Oryx, Reindeer</i>				
Apache Northwest Pty Ltd*				
			45.00	
Santos (Globe) NL				
			19.00	
Santos Offshore Pty Ltd				
			36.00	
WA-214-P R2	Carnarvon Basin	Blocks: 13	Sq km: 1,079	6/03/2008
<i>John Brookes, Maitland</i>				
Apache Northwest Pty Ltd				
			62.50	
Santos (BOL) Pty Ltd*				
			37.50	
WA-226-P R2	Perth Basin	Blocks: 26	Sq km: 2,014	5/03/2008
Apache Northwest Pty Ltd				
			28.75	
Dana Petroleum (E&P) Ltd*				
			12.81	
Dana Petroleum (WA) Ltd				
			7.19	
Origin Energy Developments Pty Ltd				
			28.75	
Roc Oil WA Pty Ltd				
			7.50	
Voyager (PB) Ltd				
			10.00	
Wandoo Petroleum Pty Ltd				
			5.00	
WA-246-P R1	Carnarvon Basin	Blocks: 4	Sq km: 270	23/10/2005
<i>Corvus, Tusk</i>				
Apache Northwest Pty Ltd*				
			45.00	
Kufpec Australia Pty Ltd				
			20.00	
Pan Pacific Petroleum (South Australia) Pty Ltd				
			10.00	
Santos (Globe) Pty Ltd				
			15.00	
Tap (Harriet) Pty Ltd				
			10.00	
WA-248-P R1	Carnarvon Basin	Blocks: 17	Sq km: 3,071	11/06/2005
Japan Australia LNG (MIMI) Pty Ltd				
			20.00	
Kufpec Australia Pty Ltd				
			35.00	
Woodside Energy Ltd*				
			45.00	
WA-253-P R1	Carnarvon Basin	Blocks: 6	Sq km: 483	21/02/2007
<i>Saturn</i>				
ChevronTexaco Australia Pty Ltd*				
			50.00	
Texaco Australia Pty Ltd				
			50.00	
WA-254-P R1	Carnarvon Basin	Blocks: 4	Sq km: 249	2/05/2006
<i>Sage</i>				
Apache Northwest Pty Ltd*				
			47.89	
First Australian Resources Limited				
			10.71	
Pan Pacific Petroleum NL				
			2.99	
Sun Resources NL				
			7.86	
Victoria Petroleum NL				
			6.17	
Woodside Energy Ltd				
			24.38	

KEY TO PETROLEUM EXPLORATION AND DEVELOPMENT TITLES

Title				
<i>Accumulation</i>				
Company (Operator*)	Equity	Expiry Date		
WA-255-P R1 Carnarvon Basin	Blocks: 46 Sq km: 3,105	1/08/2005		
<i>Eskdale, Laverda, Novara, Resolution, Stybarrow</i>				
BHP Billiton Petroleum (Australia) Pty Ltd*	50.00			
Woodside Energy Ltd	50.00			
WA-256-P R1 Carnarvon Basin	Blocks: 8 Sq km: 664	15/10/2007		
Apache Northwest Pty Ltd*	81.68			
Wandoo Petroleum Pty Ltd	18.32			
WA-257-P R1 Carnarvon Basin	Blocks: 6 Sq km: 498	18/01/2009		
Apache Northwest Pty Ltd*	51.80			
Kufpec Australia Pty Ltd	38.60			
Sun Resources NL	9.60			
WA-261-P R1 Carnarvon Basin	Blocks: 6 Sq km: 415	11/07/2007		
<i>Chamois</i>				
Apache Northwest Pty Ltd*	45.13			
Strike Oil NL	36.22			
Sun Resources NL	6.15			
Victoria Petroleum NL	12.50			
WA-264-P R1 Carnarvon Basin	Blocks: 8 Sq km: 664	3/02/2008		
<i>Carova</i>				
Beach Petroleum Ltd	16.67			
Kufpec Australia Pty Ltd	33.33			
Santos Offshore Pty Ltd*	50.00			
WA-268-P R1 Carnarvon Basin	Blocks: 74 Sq km: 5,972	15/12/2009		
Texaco Australia Pty Ltd*	100.00			
WA-269-P R1 Carnarvon Basin	Blocks: 63 Sq km: 5,088	31/08/2009		
Japan Australia LNG (MIMI) Pty Ltd				
Woodside Energy Ltd				
WA-271-P R1 Carnarvon Basin	Blocks: 41 Sq km: 3,021	24/11/2008		
<i>Falome, Laverda, Stybarrow</i>				
Mitsui E&P Australia Pty Ltd	40.00			
Woodside Energy Ltd*	60.00			
WA-274-P Browse Basin	Blocks: 69 Sq km: 5,728			
<i>Argus</i>				
Santos Ltd*	100.00			
WA-275-P R1 Browse Basin	Blocks: 25 Sq km: 2,070	31/08/2009		
BHP Billiton Petroleum (North West Shelf) Pty Ltd	20.00			
BP Developments Australia Pty Ltd	20.00			
ChevronTexaco Australia Pty Ltd	20.00			
Shell Development (Australia) Pty Ltd	20.00			
Woodside Energy Ltd*	20.00			
WA-279-P Bonaparte Basin	Blocks: 35 Sq km: 2,765			
<i>Blacktip</i>				
Eni Australia BV	46.15			
Woodside Energy Ltd*	53.85			
WA-280-P Bonaparte Basin	Blocks: 45 Sq km: 3,736			
Eni Australia Ltd*	100.00			
WA-281-P Browse Basin	Blocks: 56 Sq km: 4,649			
<i>Caswell</i>				
Beach Petroleum NL	10.00			
Oil Search (Australia) Pty Ltd	31.03			
Santos Offshore Pty Ltd*	58.97			
WA-285-P R1 Browse Basin	Blocks: 37 Sq km: 2,546	5/09/2009		
<i>Brewster</i>				
Inpex Browse Ltd*	100.00			
WA-286-P Perth Basin	Blocks: 209 Sq km: 17,433			
<i>Cliff Head</i>				
AWE Oil (Western Australia) Pty Ltd	27.50			
Cieco Browse Inc	5.00			
Roc Oil WA Pty Ltd*	37.50			
Voyager (PB) Ltd	5.00			
Wandoo Petroleum Pty Ltd	25.00			
WA-290-P Carnarvon Basin	Blocks: 6 Sq km: 498	25/07/2005		
<i>Antiope, Lauda, Minden</i>				
OMV (Barrow) Pty Ltd*	100.00			
WA-291-P Carnarvon Basin	Blocks: 111 Sq km: 9,214	3/08/2005		
Magellan Petroleum (WA) Pty Ltd*	85.00			
Tap (Shelfal) Pty Ltd	15.00			
WA-293-P Carnarvon Basin	Blocks: 205 Sq km: 17,018	3/08/2005		
Woodside Energy Ltd*	100.00			
WA-294-P Carnarvon Basin	Blocks: 117 Sq km: 9,713	16/08/2005		
BHP Billiton Petroleum (Australia) Pty Ltd	6.50			
BP Exploration (Alpha) Ltd*	26.00			
ChevronTexaco Australia Pty Ltd	13.50			
Japan Australia LNG (MIMI) Pty Ltd	20.00			
Shell Development (Australia) Pty Ltd	18.00			
Woodside Energy Ltd	16.00			

Title				
<i>Accumulation</i>				
Company (Operator*)	Equity	Expiry Date		
WA-296-P Carnarvon Basin	Blocks: 148 Sq km: 12,286	16/08/2005		
BHP Billiton Petroleum (North West Shelf) Pty Ltd	16.67			
BP Exploration (Alpha) Ltd	19.00			
ChevronTexaco Australia Pty Ltd	16.67			
Japan Australia LNG (MIMI) Pty Ltd	16.67			
Shell Development (Australia) Pty Ltd	16.66			
Woodside Energy Ltd*	14.33			
WA-297-P Carnarvon Basin	Blocks: 131 Sq km: 10,875	16/08/2005		
BHP Billiton Petroleum (North West Shelf) Pty Ltd	6.50			
BP Exploration (Alpha) Ltd	26.00			
ChevronTexaco Australia Pty Ltd	13.50			
Japan Australia LNG (MIMI) Pty Ltd	20.00			
Shell Development (Australia) Pty Ltd	18.00			
Woodside Energy Ltd*	16.00			
WA-301-P Browse Basin	Blocks: 92 Sq km: 7,665	24/07/2006		
BHP Billiton Petroleum (North West Shelf) Pty Ltd*	50.00			
Kerr-McGee North West Shelf Australia Energy Pty Ltd	50.00			
WA-302-P Browse Basin	Blocks: 53 Sq km: 4,417	24/07/2006		
BHP Billiton Petroleum (North West Shelf) Pty Ltd*	33.33			
Kerr-McGee Exploration and Production Australia Pty Ltd	33.33			
Texaco Copernicus Pty Ltd	33.33			
WA-303-P Browse Basin	Blocks: 63 Sq km: 5,236	24/07/2006		
BHP Billiton Petroleum (North West Shelf) Pty Ltd*	33.33			
Kerr-McGee North West Shelf Australia Energy Pty Ltd	33.33			
Texaco Barcoo Pty Ltd	33.33			
WA-304-P Browse Basin	Blocks: 42 Sq km: 3,491	24/07/2006		
BHP Billiton Petroleum (North West Shelf) Pty Ltd*	50.00			
Kerr-McGee North West Shelf Australia Energy Pty Ltd	50.00			
WA-305-P Browse Basin	Blocks: 63 Sq km: 5,222	24/07/2006		
BHP Billiton Petroleum (North West Shelf) Pty Ltd*	33.33			
Kerr-McGee North West Shelf Australia Energy Pty Ltd	33.33			
Texaco Barcoo Pty Ltd	33.33			
WA-306-P Browse Basin	Blocks: 56 Sq km: 4,629	24/07/2006		
Antrim Energy Australia Pty Ltd*	32.50			
Magellan Petroleum (WA) Pty Ltd	12.50			
ONGC Videsh Ltd	55.00			
WA-307-P Roebuck Basin	Blocks: 42 Sq km: 3,462	22/08/2006		
Antrim Energy Australia Pty Ltd*	50.00			
Magellan Petroleum (WA) Pty Ltd	50.00			
WA-308-P Carnarvon Basin	Blocks: 5 Sq km: 400	11/06/2007		
OMV (Timor Sea) Pty Ltd*	80.00			
OMV Petroleum Pty Ltd	20.00			
WA-309-P Carnarvon Basin	Blocks: 5 Sq km: 270	11/06/2007		
OMV (Timor Sea) Pty Ltd*	80.00			
OMV Petroleum Pty Ltd	20.00			
WA-312-P Carnarvon Basin	Blocks: 23 Sq km: 1,849	17/09/2007		
Pan Continental Oil and Gas NL	33.33			
Strike Oil NL	15.00			
Sun Resources NL	33.33			
Victoria Petroleum (WA-209-P) Pty Ltd*	18.33			
WA-313-P Bonaparte Basin	Blocks: 28 Sq km: 2,040	24/09/2007		
<i>Penguin</i>				
Eni Australia BV	50.00			
Woodside Energy Ltd*	50.00			
WA-314-P Browse Basin	Blocks: 24 Sq km: 1,959	11/05/2008		
Liberty Petroleum Corporation*	100.00			
WA-315-P Browse Basin	Blocks: 24 Sq km: 1,996	11/05/2008		
Liberty Petroleum Corporation*	100.00			
WA-316-P Bonaparte Basin	Blocks: 27 Sq km: 1,675	5/12/2007		
<i>Avocet, Eider</i>				
Ashmore Oil Pty Ltd*	100.00			
WA-317-P Bonaparte Basin	Blocks: 27 Sq km: 2,246	12/12/2007		
Drillsearch Energy NL*	100.00			
WA-318-P Bonaparte Basin	Blocks: 40 Sq km: 3,327	12/12/2007		
Drillsearch Energy NL*	100.00			
WA-319-P Bonaparte Basin	Blocks: 28 Sq km: 2,323	12/12/2007		
<i>Lesueur</i>				
Drillsearch Energy Limited*	100.00			
WA-320-P Carnarvon Basin	Blocks: 4 Sq km: 311	13/03/2008		
<i>Rosily</i>				
OMV (Timor Sea) Pty Ltd*	80.00			
OMV Petroleum Pty Ltd	20.00			
WA-321-P Carnarvon Basin	Blocks: 7 Sq km: 563	21/03/2008		
Octanex NL*	50.00			
Strata Resources NL	50.00			

KEY TO PETROLEUM EXPLORATION AND DEVELOPMENT TITLES

Title				
<i>Accumulation</i>				
Company (Operator*)		Equity	Expiry Date	
WA-322-P	Carnarvon Basin	Blocks: 9	Sq km: 719	21/03/2008
BHP Billiton Petroleum (North West Shelf) Pty Ltd*		100.00		
WA-323-P	Carnarvon Basin	Blocks: 4	Sq km: 322	21/03/2008
<i>Webley</i>				
Octanex NL*		50.00		
Strata Resources NL		50.00		
WA-324-P	Bonaparte Basin	Blocks: 30	Sq km: 2,499	4/07/2008
<i>Fishburn</i>				
Bounty Oil and Gas NL*		100.00		
WA-325-P	Perth Basin	Blocks: 90	Sq km: 6,006	23/07/2008
<i>Hadda</i>				
Apache Northwest Pty Ltd		37.50		
Bounty Oil and Gas NL		10.00		
Roc Oil WA Pty Ltd*		37.50		
Voyager (PB) Ltd		10.00		
Wandoo Petroleum Pty Ltd		5.00		
WA-326-P	Perth Basin	Blocks: 75	Sq km: 5,220	23/07/2008
Eni Australia BV*		100.00		
WA-327-P	Perth Basin	Blocks: 85	Sq km: 6,459	23/07/2008
Apache Northwest Pty Ltd*		37.50		
Bounty Oil and Gas NL		10.00		
Roc Oil WA Pty Ltd		37.50		
Voyager (PB) Ltd		10.00		
Wandoo Petroleum Pty Ltd		5.00		
WA-328-P	Perth Basin	Blocks: 69	Sq km: 5,217	24/07/2008
Eni Australia BV*		67.00		
Santos Offshore Pty Ltd		33.00		
WA-329-P	Carnarvon Basin	Blocks: 9	Sq km: 718	4/09/2008
Octanex NL*		37.50		
Rocky Mountain Minerals Inc		25.00		
Strata Resources NL		37.50		
WA-330-P	Carnarvon Basin	Blocks: 4	Sq km: 322	4/09/2008
Octanex NL*		50.00		
Strata Resources NL		50.00		
WA-331-P	Browse Basin	Blocks: 37	Sq km: 3,070	4/09/2008
Eagle Bay Resources NL		25.00		
Icon Energy Ltd		25.00		
Rawson Resources NL*		25.00		
Rough Range Oil Pty Ltd		25.00		
WA-332-P	Browse Basin	Blocks: 38	Sq km: 3,153	30/09/2008
Alpha Oil and Gas Pty Ltd		20.00		
Batavia Oil and Gas Pty Ltd*		35.00		
Goldborough Energy Pty Ltd		10.00		
Hawkestone Oil Pty Ltd		35.00		
WA-333-P	Browse Basin	Blocks: 36	Sq km: 2,986	30/09/2008
Alpha Oil and Gas Pty Ltd		20.00		
Batavia Oil and Gas Pty Ltd*		35.00		
Goldborough Energy Pty Ltd		10.00		
Hawkestone Oil Pty Ltd		35.00		
WA-334-P	Carnarvon Basin	Blocks: 4	Sq km: 172	16/12/2008
Apache Northwest Pty Ltd*		80.00		
Tap (Harriet) Pty Ltd		20.00		
WA-335-P	Carnarvon Basin	Blocks: 39	Sq km: 3,112	16/12/2008
Apache Northwest Pty Ltd*		65.00		
Kufpec Australia Pty Ltd		35.00		
WA-336-P	Perth Basin	Blocks: 83	Sq km: 6,326	17/12/2008
Petroz NL*		100.00		
WA-337-P	Perth Basin	Blocks: 49	Sq km: 3,548	14/01/2009
Kerr-McGee North West Shelf Australia Energy Pty Ltd*		100.00		
WA-338-P	Browse Basin	Blocks: 33	Sq km: 2,743	14/01/2009
Santos Offshore Pty Ltd*		71.50		
SK Corporation		28.50		
WA-339-P	Perth Basin	Blocks: 74	Sq km: 5,616	14/01/2009
Kerr-McGee North West Shelf Australia Energy Pty Ltd		50.00		
Santos Offshore Pty Ltd*		50.00		
WA-340-P	Carnarvon Basin	Blocks: 6	Sq km: 323	5/03/2008
Pan Continental Oil and Gas NL		20.00		
Strike Oil Limited*		40.00		
Sun Resources NL		20.00		
Victoria Petroleum (WA-209-P) Pty Ltd		20.00		

Title				
<i>Accumulation</i>				
Company (Operator*)		Equity	Expiry Date	
WA-341-P	Browse Basin	Blocks: 24	Sq km: 1,621	28/05/2009
<i>Adele, Santa Cruz</i>				
Alpha Oil and Natural Gas Pty Ltd		20.00		
Batavia Oil and Gas Pty Ltd*		35.00		
Goldborough Energy Pty Ltd		10.00		
Hawkestone Oil Pty Ltd		35.00		
WA-342-P	Browse Basin	Blocks: 42	Sq km: 3,273	28/05/2009
<i>Cornea, Sparkle</i>				
Alpha Oil and Natural Gas Pty Ltd		20.00		
Batavia Oil and Gas Pty Ltd*		35.00		
Goldborough Energy Pty Ltd		10.00		
Hawkestone Oil Pty Ltd		35.00		
WA-343-P	Browse Basin	Blocks: 20	Sq km: 1,214	10/06/2009
Natural Gas Australia Pty Ltd*		100.00		
WA-344-P	Browse Basin	Blocks: 8	Sq km: 665	10/06/2009
Natural Gas Australia Pty Ltd*		100.00		
WA-345-P	Carnarvon Basin	Blocks: 3	Sq km: 219	10/07/2009
OMV (Timor Sea) Pty Ltd*		80.00		
OMV Petroleum Pty Ltd		20.00		
WA-346-P	Carnarvon Basin	Blocks: 49	Sq km: 3,953	15/07/2009
<i>Jupiter (Phillips)</i>				
BHP Billiton Petroleum (North West Shelf) Pty Ltd*		100.00		
WA-347-P	Carnarvon Basin	Blocks: 65	Sq km: 5,228	25/09/2009
Woodside Energy Ltd*		100.00		
WA-348-P	Carnarvon Basin	Blocks: 67	Sq km: 5,428	25/09/2009
Woodside Energy Ltd*		100.00		
WA-349-P	Perth Basin	Blocks: 15	Sq km: 733	5/05/2010
Roc Oil WA Pty Ltd		50.00		
Voyager (PB) Ltd*		50.00		
WA-350-P	Carnarvon Basin	Blocks: 10	Sq km: 805	22/12/2009
<i>Pluto</i>				
Woodside Energy Ltd*		100.00		
WA-351-P	Carnarvon Basin	Blocks: 47	Sq km: 3,763	5/01/2010
BHP Billiton Petroleum (North West Shelf) Pty Ltd*		100.00		
WA-352-P	Carnarvon Basin	Blocks: 25	Sq km: 2,015	8/06/2010
Drillsearch Energy Limited*		100.00		
WA-353-P	Carnarvon Basin	Blocks: 143	Sq km: 11,637	20/06/2010
Woodside Energy Ltd*		100.00		
WA-354-P	Carnarvon Basin	Blocks: 12	Sq km: 960	19/12/2010
Apache Northwest Pty Ltd*		50.00		
BHP Billiton Petroleum (Australia) Pty Ltd		50.00		
WA-355-P	Carnarvon Basin	Blocks: 1	Sq km: 80	19/12/2010
<i>Zeeuulf</i>				
Apache Northwest Pty Ltd*		100.00		
WA-356-P	Carnarvon Basin	Blocks: 12	Sq km: 964	19/12/2010
<i>Venture</i>				
Apache Northwest Pty Ltd*		65.00		
Kufpec Australia Pty Ltd		35.00		
WA-357-P	Carnarvon Basin	Blocks: 6	Sq km: 479	19/12/2010
Apache Northwest Pty Ltd*		100.00		
WA-358-P	Carnarvon Basin	Blocks: 6	Sq km: 479	19/01/2010
Nippon Oil Exploration (Australia) Pty Ltd		25.00		
OMV (Barrow) Pty Ltd*		50.00		
Tap Oil Limited		25.00		
WA-359-P	Carnarvon Basin	Blocks: 15	Sq km: 1,212	31/01/2011
Cue Exploration Pty Ltd*		50.00		
Exoil Ltd		50.00		
WA-360-P	Carnarvon Basin	Blocks: 15	Sq km: 1,213	31/01/2011
Cue Exploration Pty Ltd*		50.00		
Gascorp Australia Ltd		50.00		
WA-361-P	Carnarvon Basin	Blocks: 15	Sq km: 1,212	31/01/2011
Cue Exploration Pty Ltd*		50.00		
Gascorp Australia Ltd		50.00		
TP/2 R2	Carnarvon Basin	Blocks: 4	Sq km: 310	26/04/2005
ChevronTexaco Australia Pty Ltd*				
Mobil Australia Resources Company Pty Ltd				
Santos Offshore Pty Ltd				
Texaco Australia Pty Ltd				
TP/6 R2	Carnarvon Basin	Blocks: 15	Sq km: 1,162	
Apache Northwest Pty Ltd*		100.00		

KEY TO PETROLEUM EXPLORATION AND DEVELOPMENT TITLES

Title				
Accumulation				
Company (Operator*)	Equity	Expiry Date		
TP/7 R2 Carnarvon Basin	Blocks: 16 Sq km: 1,247	7/04/2005		
<i>Cadell, Immortelle, Nasutus, Pepper, South Chevill</i>				
Ampex (PPL) Pty Ltd				
Apache Oil Australia Pty Ltd*				
Pan Pacific Petroleum (South Australia) Pty Ltd				
Santos (BOL) Pty Ltd				
TP/8 R2 Carnarvon Basin	Blocks: 16 Sq km: 1,239			
<i>Cycad, Highgrove, Narvik, Peck</i>				
Apache Northwest Pty Ltd*				
Kufpec Australia Pty Ltd				
Tap (Harriet) Pty Ltd				
TP/9 R2 Carnarvon Basin	Blocks: 3 Sq km: 387	9/07/2006		
Apache Northwest Pty Ltd*				
TP/15 R1 Perth Basin	Blocks: 47 Sq km: 3,902	21/04/2005		
Arc Energy NL				
AWE Oil (Western Australia) Pty Ltd*				
Hardman Oil and Gas Pty Ltd				
ROC Oil WA Pty Ltd				
Voyager (PB) Ltd				
Westranch Holdings Pty Ltd				
TP/17 Carnarvon Basin	Blocks: 6 Sq km: 498			
<i>Altustratus</i>				
Strike Oil NL*				
TP/18 Carnarvon Basin	Blocks: 1 Sq km: 70	11/10/2007		
Strike Oil NL				
Tap Oil Limited*				
TP/19 Carnarvon Basin	Blocks: 5 Sq km: 350	20/03/2008		
Strike Oil NL*				
TP/20 Carnarvon Basin	Blocks: 1 Sq km: 73	2/04/2008		
Tap (Shelfal) Pty Ltd*				
TP/21 Carnarvon Basin	Blocks: 4 Sq km: 284	2/04/2008		
Eagle Bay Resources NL				
Icon Energy Ltd				
Rawson Resources NL*				
Rough Range Oil Pty Ltd				
Victoria Petroleum (Middle East) Pty Ltd				
TP/22 Bonaparte Basin	Blocks: 38 Sq km: 2,812	11/01/2010		
Eni Australia BV*				
EP 325 R2 Carnarvon Basin	Blocks: 21 Sq km: 1,626			
<i>Rivoli</i>				
Sun Resources NL				
Victoria Petroleum NL*				
EP 341 R2 Carnarvon Basin	Blocks: 16 Sq km: 1,239	22/05/2005		
<i>Crackling South</i>				
Strike Oil NL*				
Tap (Shelfal) Pty Ltd				
EP 342 R2 Carnarvon Basin	Blocks: 7 Sq km: 1,084	19/04/2005		
<i>Leatherback, Ridley</i>				
Strike Oil NL*				
EP 363 R2 Carnarvon Basin	Blocks: 4 Sq km: 310	11/08/2007		
<i>Emma</i>				
Apache Northwest Pty Ltd*				
Kufpec Australia Pty Ltd				
Tap (Harriet) Pty Ltd				
EP 364 R1 Carnarvon Basin	Blocks: 1 Sq km: 77	14/05/2005		
<i>Cyano, Lindsay</i>				
Tap (Shelfal) Pty Ltd*				
Westranch Holdings Pty Ltd				
EP 395 R1 Carnarvon Basin	Blocks: 3 Sq km: 232	11/02/2007		
Tap (Shelfal) Pty Ltd*				
EP 397 R1 Carnarvon Basin	Blocks: 2 Sq km: 135	27/08/2008		
First Australian Resources Limited				
Goodrich Petroleum Company				
Tap (Shelfal) Pty Ltd*				
EP 403 R1 Carnarvon Basin	Blocks: 4 Sq km: 270	10/12/2007		
Tap (Shelfal) Pty Ltd*				
EP 406 Carnarvon Basin	Blocks: 66 Sq km: 5,111			
Euro Pacific Energy Pty Ltd				
Victoria Diamond Exploration Pty Ltd*				
EP 409 R1 Carnarvon Basin	Blocks: 2 Sq km: 155	13/05/2009		
Apache Oil Australia Pty Ltd*				
OMV (Barrow) Pty Ltd				
EP 420 Carnarvon Basin	Blocks: 1 Sq km: 12	11/10/2007		
Strike Oil Limited				
Tap Oil Limited*				
EP 421 Carnarvon Basin	Blocks: 8 Sq km: 503	20/03/2008		
Strike Oil Limited*				

Title				
Accumulation				
Company (Operator*)	Equity	Expiry Date		
EP 423 Carnarvon Basin	Blocks: 6 Sq km: 462	2/01/2009		
Eagle Bay Resources NL				
Icon Energy Ltd				
Rawson Resources NL*				
Rough Range Oil Pty Ltd				
Victoria Petroleum (Middle East) Pty Ltd				
Production Licence			Sq km approximate	
WA-1-L R1 Carnarvon Basin	Blocks: 5 Sq km: 415	29/09/2022		
<i>Gaea, North Rankin</i>				
BHP Billiton Petroleum (North West Shelf) Pty Ltd				
BP Developments Australia Pty Ltd				
ChevronTexaco Australia Pty Ltd				
Japan Australia LNG (MIMI) Pty Ltd				
Shell Development (Australia) Pty Ltd				
Woodside Energy Ltd*				
WA-2-L R1 Carnarvon Basin	Blocks: 4 Sq km: 332	29/09/2022		
<i>North Rankin</i>				
BHP Billiton Petroleum (North West Shelf) Pty Ltd				
BP Developments Australia Pty Ltd				
ChevronTexaco Australia Pty Ltd				
Japan Australia LNG (MIMI) Pty Ltd				
Shell Development (Australia) Pty Ltd				
Woodside Energy Ltd*				
WA-3-L R1 Carnarvon Basin	Blocks: 5 Sq km: 415	29/09/2022		
<i>Angel, Cossack, Lambert</i>				
BHP Billiton Petroleum (North West Shelf) Pty Ltd				
BP Developments Australia Pty Ltd				
ChevronTexaco Australia Pty Ltd				
Japan Australia LNG (MIMI) Pty Ltd				
Shell Development (Australia) Pty Ltd				
Woodside Energy Ltd*				
WA-4-L R1 Carnarvon Basin	Blocks: 4 Sq km: 332	29/09/2022		
<i>Exeter, Lambert</i>				
BHP Billiton Petroleum (North West Shelf) Pty Ltd				
BP Developments Australia Pty Ltd				
ChevronTexaco Australia Pty Ltd				
Japan Australia LNG (MIMI) Pty Ltd				
Shell Development (Australia) Pty Ltd				
Woodside Energy Ltd*				
WA-5-L R1 Carnarvon Basin	Blocks: 5 Sq km: 415	29/09/2022		
<i>Dockrell, Goodwyn, Keast, Rankin, Tidepole</i>				
BHP Billiton Petroleum (North West Shelf) Pty Ltd				
BP Developments Australia Pty Ltd				
ChevronTexaco Australia Pty Ltd				
Japan Australia LNG (MIMI) Pty Ltd				
Shell Development (Australia) Pty Ltd				
Woodside Energy Ltd*				
WA-6-L R1 Carnarvon Basin	Blocks: 4 Sq km: 332	29/09/2022		
<i>Dockrell, Goodwyn, Keast</i>				
BHP Billiton Petroleum (North West Shelf) Pty Ltd				
BP Developments Australia Pty Ltd				
ChevronTexaco Australia Pty Ltd				
Japan Australia LNG (MIMI) Pty Ltd				
Shell Development (Australia) Pty Ltd				
Woodside Energy Ltd*				
WA-7-L Carnarvon Basin	Blocks: 2 Sq km: 155	3/02/2009		
<i>Barrow Island</i>				
ChevronTexaco Australia Pty Ltd				
Mobil Australia Resources Company Pty Ltd				
Santos Offshore Pty Ltd*				
Texaco Australia Pty Ltd				
WA-8-L Carnarvon Basin	Blocks: 2 Sq km: 166	16/08/2009		
<i>Talisman</i>				
Kufpec Australia Pty Ltd				
Santos Ltd*				
Tap (Shelfal) Pty Ltd				
WA-9-L Carnarvon Basin	Blocks: 1 Sq km: 83	11/04/2012		
<i>Cossack, Wanana</i>				
BHP Billiton Petroleum (North West Shelf) Pty Ltd				
BP Developments Australia Pty Ltd				
ChevronTexaco Australia Pty Ltd				
Japan Australia LNG (MIMI) Pty Ltd				
Shell Development (Australia) Pty Ltd				
Woodside Energy Ltd*				
WA-10-L Carnarvon Basin	Blocks: 4 Sq km: 310	18/02/2014		
<i>Bowers, Chinook/Scindian, Griffin</i>				
BHP Billiton Petroleum (Australia) Pty Ltd*				
Impex Alpha Ltd				
Mobil Exploration and Producing Australia Pty Ltd				

KEY TO PETROLEUM EXPLORATION AND DEVELOPMENT TITLES

Title				
<i>Accumulation</i>				
Company (Operator*)		Equity	Expiry Date	
WA-11-L	Carnarvon Basin	Blocks: 2	Sq km: 166	30/09/2014
<i>Wanaea</i>				
BHP Billiton Petroleum (North West Shelf) Pty Ltd		16.67		
BP Developments Australia Pty Ltd		16.67		
ChevronTexaco Australia Pty Ltd		16.67		
Japan Australia LNG (MIMI) Pty Ltd		16.67		
Shell Development (Australia) Pty Ltd		16.67		
Woodside Energy Ltd*		16.67		
WA-12-L	Carnarvon Basin	Blocks: 1	Sq km: 77	13/02/2015
<i>Griffin</i>				
BHP Billiton Petroleum (Australia) Pty Ltd*		71.43		
Mobil Australia Resources Company Pty Ltd		28.57		
WA-13-L	Carnarvon Basin	Blocks: 3	Sq km: 232	18/02/2017
<i>East Spar</i>				
Apache East Spar Pty Ltd		25.00		
Apache Northwest Pty Ltd		5.00		
Apache Oil Australia Pty Ltd		25.00		
Santos (BOL) Pty Ltd*		45.00		
WA-14-L	Carnarvon Basin	Blocks: 3	Sq km: 232	19/03/2017
<i>Wandoo</i>				
Mobil (Legendre) Pty Ltd*		60.00		
Wandoo Petroleum Pty Ltd		40.00		
WA-15-L	Carnarvon Basin	Blocks: 2	Sq km: 155	25/08/2018
<i>Antler, Stag</i>				
Apache Northwest Pty Ltd*		33.33		
Santos (Globe) Pty Ltd		33.33		
Santos Offshore Pty Ltd		33.33		
WA-16-L	Carnarvon Basin	Blocks: 1	Sq km: 83	11/09/2018
<i>Lambert</i>				
BHP Billiton Petroleum (North West Shelf) Pty Ltd		16.67		
BP Developments Australia Pty Ltd		16.67		
ChevronTexaco Australia Pty Ltd		16.67		
Japan Australia LNG (MIMI) Pty Ltd		16.67		
Shell Development (Australia) Pty Ltd		16.67		
Woodside Energy Ltd*		16.67		
WA-17-L	Carnarvon Basin	Blocks: 3	Sq km: 249	14/01/2020
<i>North Rankin</i>				
Mobil Australia Resources Company Pty Ltd*		50.00		
Phillips Australia Gas Holdings Pty Ltd		50.00		
WA-18-L	Bonaparte Basin	Blocks: 1	Sq km: 83	12/05/2020
<i>Laminaria</i>				
BHP Billiton Petroleum (North West Shelf) Pty Ltd*		100.00		
WA-19-L	Bonaparte Basin	Blocks: 2	Sq km: 166	5/09/2020
<i>Nexen Petroleum Australia Pty Ltd*</i>				
WA-20-L	Carnarvon Basin	Blocks: 1	Sq km: 83	15/11/2020
<i>Legendre</i>				
Apache Northwest Pty Ltd		31.50		
Santos Ltd		22.56		
Woodside Energy Ltd*		45.94		
WA-21-L	Bonaparte Basin	Blocks: 1	Sq km: 83	25/11/2020
<i>Nexen Petroleum Australia Pty Ltd*</i>				
WA-22-L	Carnarvon Basin	Blocks: 1	Sq km: 77	28/02/2021
<i>East Spar</i>				
Eni Australia Ltd*		30.00		
Mobil Australia Resources Company Pty Ltd		20.00		
PanCanadian Petroleum Ltd		40.00		
Tap West Pty Ltd		10.00		
WA-23-L	Carnarvon Basin	Blocks: 1	Sq km: 81	12/09/2022
<i>Rankin</i>				
BHP Billiton Petroleum (North West Shelf) Pty Ltd		16.67		
BP Developments Australia Pty Ltd		16.67		
ChevronTexaco Australia Pty Ltd		16.67		
Japan Australia LNG (MIMI) Pty Ltd		16.67		
Shell Development (Australia) Pty Ltd		16.67		
Woodside Energy Ltd*		16.67		
WA-24-L	Carnarvon Basin	Blocks: 1	Sq km: 81	12/09/2022
<i>Rankin</i>				
BHP Billiton Petroleum (North West Shelf) Pty Ltd		16.67		
BP Developments Australia Pty Ltd		16.67		
ChevronTexaco Australia Pty Ltd		16.67		
Japan Australia LNG (MIMI) Pty Ltd		16.67		
Shell Development (Australia) Pty Ltd		16.67		
Woodside Energy Ltd*		16.67		
WA-25-L	Carnarvon Basin	Blocks: 5	Sq km: 371	20/06/2022
<i>Woollybutt</i>				
Eni Australia Ltd*		65.00		
Mobil Australia Resources Company Pty Ltd		20.00		
Tap West Pty Ltd		15.00		
WA-26-L	Carnarvon Basin	Blocks: 2	Sq km: 152	23/03/2025
<i>Exeter, Mutineer</i>				
Kufpec Australia Pty Ltd*		33.40		
Nippon Oil Exploration (Dampier) Pty Ltd		25.00		
Santos Ltd		33.40		
Woodside Energy Ltd		8.20		

Title				
<i>Accumulation</i>				
Company (Operator*)		Equity	Expiry Date	
WA-27-L	Carnarvon Basin	Blocks: 1	Sq km: 76	23/04/2025
<i>Exeter</i>				
Kufpec Australia Pty Ltd		33.40		
Nippon Oil Exploration (Dampier) Pty Ltd		25.00		
Santos Ltd*		33.40		
Woodside Energy Ltd		8.20		
WA-28-L	Carnarvon Basin	Blocks: 3	Sq km: 241	28/03/2025
<i>Enfield</i>				
Mitsui E&P Australia Pty Ltd		40.00		
Woodside Energy Ltd*		60.00		
WA-29-L	Carnarvon Basin	Blocks: 3	Sq km: 241	20/12/2025
<i>John Brookes</i>				
Apache Northwest Pty Ltd*		62.50		
Santos (BOL) Pty Ltd		37.50		
TL/1	Carnarvon Basin	Blocks: 2	Sq km: 387	6/11/2006
<i>Baker, Bamba, Endymion, Ginger, Gipsy, Gudrun, Harriet, Hoover, Josephine, Lee, Linda, Little Sandy, Mohave, Monet, Monty, North Gipsy, North Marra, Pedirka, Rose, Simpson, Tanami, Ulidia</i>				
Apache Northwest Pty Ltd*				
Kufpec Australia Pty Ltd				
Tap (Harriet) Pty Ltd				
TL/2	Carnarvon Basin	Blocks: 5	Sq km: 387	25/11/2008
<i>Basil, Bennet, Cheryl, Elder, North Herald, South Pepper, Taunton</i>				
Ampolex (PPL) Pty Ltd				
Apache Oil Australia Pty Ltd*				
Pan Pacific Petroleum (South Australia) Pty Ltd				
Santos (BOL) Pty Ltd				
TL/3	Carnarvon Basin	Blocks: 7	Sq km: 542	3/02/2009
<i>Barrow Island</i>				
ChevronTexaco Australia Pty Ltd*				
Mobil Australia Resources Company Pty Ltd				
Santos Offshore Pty Ltd				
Texaco Australia Pty Ltd				
TL/4	Carnarvon Basin	Blocks: 4	Sq km: 310	14/11/2010
<i>Cowle, Crest, Saladin, Skate</i>				
ChevronTexaco Australia Pty Ltd*				
Mobil Australia Resources Company Pty Ltd				
Santos Offshore Pty Ltd				
Texaco Australia Pty Ltd				
TL/5	Carnarvon Basin	Blocks: 3	Sq km: 232	3/11/2012
<i>Campbell, Orpheus, Selene, Sinbad, Windsor</i>				
Apache Northwest Pty Ltd*				
Kufpec Australia Pty Ltd				
Tap (Harriet) Pty Ltd				
TL/6	Carnarvon Basin	Blocks: 2	Sq km: 321	3/11/2012
<i>Agnour, Albert, Alkimos, Gibson, Jane, North Alkimos, Remus, Rosette, South Plato, Tanami, Victoria</i>				
Apache Northwest Pty Ltd*				
Kufpec Australia Pty Ltd				
Tap (Harriet) Pty Ltd				
TL/7	Carnarvon Basin	Blocks: 2	Sq km: 155	15/12/2014
<i>Coaster, Roller, Skate</i>				
ChevronTexaco Australia Pty Ltd*				
Mobil Australia Resources Company Pty Ltd				
Santos Offshore Pty Ltd				
Texaco Australia Pty Ltd				
TL/8	Carnarvon Basin	Blocks: 4	Sq km: 310	20/09/2019
<i>Womich</i>				
Apache Northwest Pty Ltd*				
Kufpec Australia Pty Ltd				
Tap (Harriet) Pty Ltd				
TL/9	Carnarvon Basin	Blocks: 1	Sq km: 80	28/11/2023
<i>Double Island</i>				
Apache Northwest Pty Ltd*				
Kufpec Australia Pty Ltd				
Tap (Harriet) Pty Ltd				
Retention Lease				
Sq km approximate				
WA-1-R3	Carnarvon Basin	Blocks: 9	Sq km: 726	1/02/2010
<i>Scarborough</i>				
BHP Billiton Petroleum (North West Shelf) Pty Ltd		50.00		
Eso Australia Resources Pty Ltd*		50.00		
WA-2-R2	Carnarvon Basin	Blocks: 10	Sq km: 830	28/05/2008
<i>Chrysaor, Gorgon</i>				
ChevronTexaco Australia Pty Ltd*		28.57		
Mobil Australia Resources Company Pty Ltd		14.29		
Shell Development (Australia) Pty Ltd		28.57		
Texaco Australia Pty Ltd		28.57		
WA-3-R2	Carnarvon Basin	Blocks: 1	Sq km: 83	28/05/2008
<i>Gorgon</i>				
ChevronTexaco Australia Pty Ltd*		28.57		
Mobil Australia Resources Company Pty Ltd		14.29		
Shell Development (Australia) Pty Ltd		28.57		
Texaco Australia Pty Ltd		28.57		

KEY TO PETROLEUM EXPLORATION AND DEVELOPMENT TITLES

Title				
<i>Accumulation</i>				
Company (Operator*)		Equity	Expiry Date	
WA-4-R R2	Carnarvon Basin	Blocks: 2	Sq km: 166	28/05/2008
<i>Spar</i>				
ChevronTexaco Australia Pty Ltd*		28.57		
Mobil Australia Resources Company Pty Ltd		14.29		
Shell Development (Australia) Pty Ltd		28.57		
Texaco Australia Pty Ltd		28.57		
WA-5-R R2	Carnarvon Basin	Blocks: 3		28/05/2008
<i>West Trial Rocks</i>				
ChevronTexaco Australia Pty Ltd*		28.57		
Mobil Australia Resources Company Pty Ltd		14.29		
Shell Development (Australia) Pty Ltd		28.57		
Texaco Australia Pty Ltd		28.57		
WA-6-R R1	Bonaparte Basin	Blocks: 10	Sq km: 830	
<i>Petrel</i>				
Alliance Minerals Australia Pty Ltd		15.00		
Bonaparte Gas and Oil Pty Ltd		44.51		
Origin Energy Bonaparte Pty Ltd		5.00		
Santos Ltd*		35.49		
WA-7-R R1	Carnarvon Basin	Blocks: 3	Sq km: 249	8/11/2005
<i>Wilcox</i>				
BHP Billiton Petroleum (North West Shelf) Pty Ltd		16.67		
BP Developments Australia Pty Ltd		16.67		
ChevronTexaco Australia Pty Ltd		16.67		
Japan Australia LNG (MIMI) Pty Ltd		16.67		
Shell Development (Australia) Pty Ltd		16.67		
Woodside Energy Ltd*		16.67		
WA-9-R R1	Carnarvon Basin	Blocks: 1	Sq km: 83	5/08/2007
<i>Dixon</i>				
BHP Billiton Petroleum (North West Shelf) Pty Ltd		16.67		
BP Developments Australia Pty Ltd		16.67		
ChevronTexaco Australia Pty Ltd		16.67		
Japan Australia LNG (MIMI) Pty Ltd		16.67		
Shell Development (Australia) Pty Ltd		16.67		
Woodside Energy Ltd*		16.67		
WA-10-R R1	Carnarvon Basin	Blocks: 2	Sq km: 166	11/07/2007
<i>Egret, Montague</i>				
BHP Billiton Petroleum (North West Shelf) Pty Ltd		16.67		
BP Developments Australia Pty Ltd		16.67		
ChevronTexaco Australia Pty Ltd		16.67		
Japan Australia LNG (MIMI) Pty Ltd		16.67		
Shell Development (Australia) Pty Ltd		16.67		
Woodside Energy Ltd*		16.67		
WA-12-R R1	Carnarvon Basin	Blocks: 5	Sq km: 415	5/10/2008
<i>Crosby, Harrison, Macedon/Pyrenes, Stickle</i>				
Apache Northwest Pty Ltd		28.57		
BHP Billiton Petroleum (Australia) Pty Ltd*		71.43		
WA-13-R	Bonaparte Basin	Blocks: 2	Sq km: 134	18/10/2005
<i>Turtle</i>				
Basin Oil NL		23.50		
Frontier Bonaparte Pty Ltd		5.90		
OMV (Timor Sea) Pty Ltd		52.90		
OMV Petroleum Pty Ltd*		17.70		
WA-14-R	Carnarvon Basin	Blocks: 1	Sq km: 81	8/11/2005
<i>Chrysaor</i>				
ChevronTexaco Australia Pty Ltd*		28.57		
Mobil Australia Resources Company Pty Ltd		14.29		
Shell Development (Australia) Pty Ltd		28.57		
Texaco Australia Pty Ltd		28.57		
WA-15-R	Carnarvon Basin	Blocks: 4	Sq km: 322	19/04/2006
<i>Chrysaor</i>				
ChevronTexaco Australia Pty Ltd*		100.00		
WA-16-R	Carnarvon Basin	Blocks: 2	Sq km: 161	22/08/2007
<i>Jago</i>				
ChevronTexaco Australia Pty Ltd*		28.57		
Mobil Australia Resources Company Pty Ltd		14.29		
Shell Development (Australia) Pty Ltd		28.57		
Texaco Australia Pty Ltd		28.57		
WA-17-R	Carnarvon Basin	Blocks: 2	Sq km: 161	1/10/2007
<i>Jago, Wheatstone</i>				
Chevron Australia Pty Ltd*		50.00		
Texaco Australia Pty Ltd		50.00		
WA-18-R	Carnarvon Basin	Blocks: 27	Sq km: 2,175	29/10/2007
<i>Jansz</i>				
Mobil Exploration and Producing Australia Pty Ltd*		50.00		
Texaco Australia Pty Ltd		50.00		
WA-19-R	Carnarvon Basin	Blocks: 1	Sq km: 80	17/08/2008
<i>Orthrus</i>				
ChevronTexaco Australia Pty Ltd*		50.00		
Texaco Australia Pty Ltd		50.00		
WA-20-R	Carnarvon Basin	Blocks: 1	Sq km: 81	17/08/2008
<i>Geryon</i>				
ChevronTexaco Australia Pty Ltd*		50.00		
Texaco Australia Pty Ltd		50.00		

Title				
<i>Accumulation</i>				
Company (Operator*)		Equity	Expiry Date	
WA-21-R	Carnarvon Basin	Blocks: 1	Sq km: 81	17/08/2008
<i>Urania</i>				
ChevronTexaco Australia Pty Ltd*		50.00		
Texaco Australia Pty Ltd		50.00		
WA-22-R	Carnarvon Basin	Blocks: 4	Sq km: 322	17/08/2008
<i>Geryon</i>				
BP Exploration (Alpha) Ltd		12.50		
ChevronTexaco Australia Pty Ltd*		25.00		
Mobil Australia Resources Company Pty Ltd		25.00		
Shell Development (Australia) Pty Ltd		12.50		
Texaco Australia Pty Ltd		25.00		
WA-23-R	Carnarvon Basin	Blocks: 1	Sq km: 81	17/08/2008
<i>Urania</i>				
BP Exploration (Alpha) Ltd		12.50		
ChevronTexaco Australia Pty Ltd*		25.00		
Mobil Australia Resources Company Pty Ltd		25.00		
Shell Development (Australia) Pty Ltd		12.50		
Texaco Australia Pty Ltd		25.00		
WA-24-R	Carnarvon Basin	Blocks: 6	Sq km: 483	17/08/2008
<i>Maenad, Orthrus</i>				
BP Exploration (Alpha) Ltd		12.50		
ChevronTexaco Australia Pty Ltd*		25.00		
Mobil Australia Resources Company Pty Ltd		25.00		
Shell Development (Australia) Pty Ltd		12.50		
Texaco Australia Pty Ltd		25.00		
WA-25-R	Carnarvon Basin	Blocks: 9	Sq km: 725	17/08/2008
<i>Geryon, Jansz</i>				
BP Exploration (Alpha) Ltd		12.50		
ChevronTexaco Australia Pty Ltd*		25.00		
Mobil Australia Resources Company Pty Ltd		25.00		
Shell Development (Australia) Pty Ltd		12.50		
Texaco Australia Pty Ltd		25.00		
WA-26-R	Carnarvon Basin	Blocks: 9	Sq km: 725	17/08/2008
<i>Jansz</i>				
BP Exploration (Alpha) Ltd		12.50		
ChevronTexaco Australia Pty Ltd*		25.00		
Mobil Australia Resources Company Pty Ltd		25.00		
Shell Development (Australia) Pty Ltd		12.50		
Texaco Australia Pty Ltd		25.00		
WA-27-R	Bonaparte Basin	Blocks: 4	Sq km: 333	28/10/2008
<i>Tern</i>				
Bonaparte Gas and Oil Pty Ltd		30.00		
Santos Ltd*		62.50		
Santos Offshore Pty Ltd		7.50		
WA-28-R	Browse Basin	Blocks: 4	Sq km: 323	29/12/2008
BHP Billiton Petroleum (North West Shelf) Pty Ltd		20.00		
BP Developments Australia Pty Ltd		20.00		
ChevronTexaco Australia Pty Ltd		20.00		
Shell Development (Australia) Pty Ltd		15.00		
Woodside Energy Ltd*		25.00		
WA-29-R	Browse Basin	Blocks: 2	Sq km: 166	29/12/2008
BHP Billiton Petroleum (North West Shelf) Pty Ltd		20.00		
BP Developments Australia Pty Ltd		20.00		
ChevronTexaco Australia Pty Ltd		20.00		
Shell Development (Australia) Pty Ltd		15.00		
Woodside Energy Ltd*		25.00		
WA-30-R	Browse Basin	Blocks: 13	Sq km: 816	29/12/2008
BHP Billiton Petroleum (North West Shelf) Pty Ltd		8.33		
BP Developments Australia Pty Ltd		16.67		
ChevronTexaco Australia Pty Ltd		16.67		
Shell Development (Australia) Pty Ltd		8.33		
Woodside Energy Ltd*		50.00		
WA-31-R	Browse Basin	Blocks: 4	Sq km: 323	29/12/2008
<i>Brecknock South</i>				
BHP Billiton Petroleum (North West Shelf) Pty Ltd		8.33		
BP Developments Australia Pty Ltd		16.67		
ChevronTexaco Australia Pty Ltd		16.67		
Shell Development (Australia) Pty Ltd		8.33		
Woodside Energy Ltd*		50.00		
WA-32-R	Browse Basin	Blocks: 6	Sq km: 497	29/12/2008
<i>Brecknock</i>				
BHP Billiton Petroleum (North West Shelf) Pty Ltd		8.33		
BP Developments Australia Pty Ltd		16.67		
ChevronTexaco Australia Pty Ltd		16.67		
Shell Development (Australia) Pty Ltd		8.33		
Woodside Energy Ltd*		50.00		
WA-33-R	Carnarvon Basin	Blocks: 4	Sq km: 331	4/04/2009
Apache Oil Australia Pty Ltd*		48.82		
Pan Pacific Petroleum (South Australia) Pty Ltd		10.00		
Santos (BOL) Pty Ltd		18.71		
Tap (Shelfa) Pty Ltd		22.47		

KEY TO PETROLEUM EXPLORATION AND DEVELOPMENT TITLES

Title				
Accumulation				
Company (Operator*)		Equity	Expiry Date	
WA-34-R	Bonaparte Basin	Blocks: 5	Sq km: 417	14/07/2009
<i>Prometheus</i>				
EnCana Corporation		34.00		
Kerr-McGee North West Shelf Australia Energy Pty Ltd*		39.00		
SK Corporation		10.00		
Tap Oil Limited		17.00		
TR/1 R1	Carnarvon Basin	Blocks: 2	Sq km: 160	8/12/2009
<i>Errol, Flinders Shoal</i>				
Apache Northwest Pty Ltd*				
Kufpec Australia Pty Ltd				
Tap (Harriet) Pty Ltd				
TR/2 R1	Carnarvon Basin	Blocks: 1	Sq km: 80	8/12/2009
<i>Apache Northwest Pty Ltd*</i>				
Kufpec Australia Pty Ltd				
Tap (Harriet) Pty Ltd				
TR/3	Carnarvon Basin	Blocks: 2	Sq km: 30	19/11/2006
<i>Blencathra</i>				
Apache Northwest Pty Ltd*		100.00		
TR/4	Carnarvon Basin	Blocks: 1	Sq km: 80	28/07/2007
<i>Australind, Koolinda</i>				
ChevronTexaco Australia Pty Ltd*				
Mobil Australia Resources Company Pty Ltd				
Santos Offshore Pty Ltd				
Texaco Australia Pty Ltd				
TR/5	Browse Basin	Blocks: 13	Sq km: 685	29/12/2008
<i>BHP Billiton Petroleum (North West Shelf) Pty Ltd</i>				
BP Developments Australia Pty Ltd				
ChevronTexaco Australia Pty Ltd				
Shell Development (Australia) Pty Ltd				
Woodside Energy Ltd*				

Northern Territory

Onshore				
Exploration Permit				
		Sq km approximate		
EP69	Amadeus Basin	Blocks: 18	Sq km: 1,394	12/07/2006
<i>Innovative Technological Geo-Exploration Pty Ltd</i>				
			35.28	
<i>IOR Exploration (NT) Pty Ltd*</i>				
			36.72	
<i>Moroil Pty Ltd</i>				
			28.00	
EP76	Georgina Basin	Blocks: 61	Sq km: 4,986	7/03/2006
<i>Sweetpea Corporation Pty Ltd*</i>				
			100.00	
EP93	Basin	Blocks: 117	Sq km: 9,539	31/10/2009
<i>Merlin Energy Pty Ltd*</i>				
			100.00	
EP97	Eromanga Basin	Blocks: 147	Sq km: 11,377	20/10/2006
<i>Rawson Resources NL*</i>				
			100.00	
EP98	Georgina Basin	Blocks: 139	Sq km: 11,519	3/02/2009
<i>Sweetpea Corporation Pty Ltd*</i>				
			100.00	
EP99	Georgina Basin	Blocks: 32	Sq km: 2,609	3/02/2009
<i>Sweetpea Corporation Pty Ltd*</i>				
			100.00	
Production Licence				
		Sq km approximate		
L3	Amadeus Basin	Blocks: -	Sq km: 638	5/11/2024
<i>Palm Valley</i>				
Canso Resources Ltd			15.38	
Farmout Drillers Pty Ltd			9.38	
Magellan Petroleum (NT) Pty Ltd*			52.02	
Santos Exploration Pty Ltd			9.60	
Santos Ltd			13.62	
L4	Amadeus Basin	Blocks: -	Sq km: 123	17/11/2023
<i>Mereenie</i>				
Canso Resources Ltd			15.00	
Farmout Drillers Pty Ltd			6.25	
Magellan Petroleum (NT) Pty Ltd*			35.00	
Moonie Oil Pty Ltd			21.00	
Petromin Pty Ltd			7.50	
Santos Exploration Pty Ltd			6.25	
Transoil Pty Ltd			9.00	
L5	Amadeus Basin	Blocks: -	Sq km: 158	17/11/2023
<i>Mereenie</i>				
Canso Resources Ltd			15.00	
Farmout Drillers Pty Ltd			6.25	
Magellan Petroleum (NT) Pty Ltd*			35.00	
Moonie Oil Pty Ltd			21.00	
Petromin Pty Ltd			7.50	
Santos Exploration Pty Ltd			6.25	
Transoil Pty Ltd			9.00	
Retention Lease				
		Sq km approximate		
RL1	Bonaparte Basin	Blocks: 2	Sq km: 166	3/06/2006
<i>Weaber</i>				
Kimberly Energy Group Pty Ltd*			100.00	

Title				
Accumulation				
Company (Operator*)		Equity	Expiry Date	
RL2	Amadeus Basin	Blocks: 6	Sq km: 465	16/02/2009
<i>Dingo</i>				
Canso Resources Ltd		5.14		
Farmout Drillers Pty Ltd		5.50		
Magellan Petroleum (NT) Pty Ltd		34.34		
Moonie Oil Co Ltd		3.56		
Petromin Pty Ltd		0.02		
Santos Exploration Pty Ltd		19.45		
Santos Ltd*		30.46		
Transoil Pty Ltd		1.53		

Offshore				
Exploration Permit				
		Sq km approximate		
NT/P48 R1	Bonaparte Basin	Blocks: 74	Sq km: 12,369	24/06/2007
<i>Evans Shoal</i>				
Osaka Gas Australia Pty Ltd			10.00	
Santos (NGA) Pty Ltd			40.00	
Shell Development (Australia) Pty Ltd*			50.00	
NT/P55	Bonaparte Basin	Blocks: 3	Sq km: 4,649	
<i>Sunrise</i>				
Osaka Gas Australia Pty Ltd			10.00	
Phillips STL Pty Ltd			30.00	
Shell Development (Australia) Pty Ltd			33.33	
Woodside Energy Ltd*			26.67	
NT/P61	Bonaparte Basin	Blocks: 63	Sq km: 5,299	13/11/2007
<i>Caldita</i>				
Santos Offshore Pty Ltd*			100.00	
NT/P62	Bonaparte Basin	Blocks: 56	Sq km: 4,710	19/09/2008
<i>Australian Natural Gas Pty Ltd</i>				
			35.00	
<i>National Oil and Gas Pty Ltd*</i>				
			35.00	
<i>Nations Natural Gas Pty Ltd</i>				
			30.00	
NT/P63	Bonaparte Basin	Blocks: 37	Sq km: 3,112	19/09/2008
<i>Australian Natural Gas Pty Ltd</i>				
			35.00	
<i>National Oil and Gas Pty Ltd*</i>				
			35.00	
<i>Nations Natural Gas Pty Ltd</i>				
			30.00	
NT/P64	Bonaparte Basin	Blocks: 50	Sq km: 4,205	19/09/2008
<i>Bonaparte</i>				
Australian Natural Gas Pty Ltd			35.00	
National Oil and Gas Pty Ltd*			35.00	
Nations Natural Gas Pty Ltd			30.00	
NT/P65	Bonaparte Basin	Blocks: 56	Sq km: 4,710	21/04/2009
<i>Sunrise, Troubadour</i>				
Australian Natural Gas Pty Ltd			35.00	
National Oil and Gas Pty Ltd*			35.00	
Nations Natural Gas Pty Ltd			30.00	
NT/P66	Bonaparte Basin	Blocks: 47	Sq km: 3,953	25/06/2009
<i>Nexus Energy Australia NL*</i>				
			100.00	
NT/P67	Bonaparte Basin	Blocks: 43	Sq km: 3,616	14/09/2009
<i>Santos Offshore Pty Ltd*</i>				
			100.00	
NT/P68	Bonaparte Basin	Blocks: 140	Sq km: 11,775	22/02/2010
<i>Oz-Exoil NL</i>				
			50.00	
<i>TSP Arafura Petroleum Pty Ltd*</i>				
			50.00	

Territory of Ashmore and Cartier Islands				
Adjacent Area				
Offshore				
Exploration Permit				
		Sq km approximate		
AC/P4 R4	Bonaparte Basin	Blocks: 17	Sq km: 494	13/08/2007
<i>Lorikeet</i>				
OMV (Timor Sea) Pty Ltd			20.00	
Woodside Oil Ltd*			80.00	

KEY TO PETROLEUM EXPLORATION AND DEVELOPMENT TITLES

Title				
Accumulation				
Company (Operator*)		Equity	Expiry Date	
AC/P8 R4	Bonaparte Basin	Blocks: 12	Sq km: 996	7/04/2007
Shell Development (Australia) Pty Ltd			25.00	
Woodside Energy Ltd*			75.00	
AC/P17 R1	Bonaparte Basin	Blocks: 7	Sq km: 581	8/07/2007
<i>Audacious</i>				
Cosmo Oil Company Ltd			35.00	
OMV (Timor Sea) Pty Ltd*			35.00	
Woodside Energy Ltd			30.00	
AC/P19	Bonaparte Basin	Blocks: 18	Sq km: 1,494	
Indo-Pacific Energy Australia Pty Ltd			20.00	
Odyssey International Pty Ltd*			80.00	
AC/P20	Bonaparte Basin	Blocks: 13	Sq km: 1,494	
<i>Cash, Maple</i>				
Coastal Oil and Gas Australia Pty Ltd*			50.00	
Newfield Australia (Ashmore Cartier) Ltd			40.00	
Todd Petroleum Mining Company Ltd			10.00	
AC/P21 R1	Bonaparte Basin	Blocks: 16	Sq km: 1,577	29/10/2009
<i>East Swan, Eclipse, Swan, Vesta</i>				
Eni Australia Ltd*			100.00	
AC/P22 R1	Bonaparte Basin	Blocks: 11	Sq km: 1,826	31/08/2009
<i>Puffin</i>				
Ashmore Oil Pty Ltd*			45.00	
Longview Resources Ltd			10.00	
Westranch Holdings Pty Ltd			45.00	
AC/P23	Bonaparte Basin	Blocks: 2	Sq km: 172	
<i>Crux</i>				
Crux S.A.*			100.00	
AC/P24	Bonaparte Basin	Blocks: 20	Sq km: 1,660	
<i>Katandra</i>				
OMV (Timor Sea) Pty Ltd*			100.00	
AC/P26	Bonaparte Basin	Blocks: 5	Sq km: 415	
Indo-Pacific Energy Australia Pty Ltd			5.00	
TransOrient Petroleum (Australia) Pty Ltd			45.00	
West Oil NL*			50.00	
AC/P30	Browse Basin	Blocks: 49	Sq km: 4,068	
<i>Argus</i>				
BHP Billiton Petroleum (North West Shelf) Pty Ltd			66.67	
Encana International (Australia) Pty Ltd			33.33	
AC/P32	Bonaparte Basin	Blocks: 13	Sq km: 1,079	27/02/2007
Daytona Energy Corporation*			18.00	
Eagle Bay Resources NL			30.00	
West Oil NL			18.00	
Westranch Holdings Pty Ltd			34.00	
AC/P33	Bonaparte Basin	Blocks: 5	Sq km: 415	24/06/2010
<i>Oliver</i>				
Auralandia NL			40.00	
Gascorp Inc			20.00	
Natural Gas Corporation Pty Ltd*			40.00	
AC/P34	Bonaparte Basin	Blocks: 35	Sq km: 2,920	5/07/2009
<i>Birch, Keeling, Maret, Skua, Swift</i>				
Coogee Resources (Ashmore Cartier) Pty Ltd*			100.00	
Production Licence		Sq km approximate		
AC/L1	Bonaparte Basin	Blocks: 4	Sq km: 332	16/07/2006
<i>Jabiru, Pengana</i>				
Anadarko Canada Corporation			14.69	
Coogee Resources (Ashmore Cartier) Pty Ltd*			50.00	
Mobil Australia Resources Company Pty Ltd			6.25	
OMV (Timor Sea) Pty Ltd			18.75	
Santos Offshore Pty Ltd			10.31	
AC/L2	Bonaparte Basin	Blocks: 4	Sq km: 332	16/07/2006
Anadarko Canada Corporation			14.69	
Coogee Resources (Ashmore Cartier) Pty Ltd*			50.00	
Mobil Australia Resources Company Pty Ltd			6.25	
OMV (Timor Sea) Pty Ltd			18.75	
Santos Offshore Pty Ltd			10.31	
AC/L3	Bonaparte Basin	Blocks: 9	Sq km: 747	28/01/2009
<i>Cassini, Challis</i>				
Anadarko Canada Corporation			14.69	
Coogee Resources (Ashmore Cartier) Pty Ltd*			50.00	
Mobil Australia Resources Company Pty Ltd			6.25	
OMV (Timor Sea) Pty Ltd			18.75	
Santos Offshore Pty Ltd			10.31	
AC/L5	Bonaparte Basin	Blocks: 2	Sq km: 166	5/02/2018
<i>Corallina, Laminaria</i>				
BHP Billiton Petroleum (North West Shelf) Pty Ltd			25.00	
Shell Development (Australia) Pty Ltd			25.00	
Woodside Energy Ltd*			50.00	
Retention Lease		Sq km approximate		
AC/RL1 R1	Bonaparte Basin	Blocks: 1	Sq km: 83	
<i>Talbot</i>				
Hardman Oil and Gas Pty Ltd*			100.00	

Title				
Accumulation				
Company (Operator*)		Equity	Expiry Date	
AC/RL3 R1	Bonaparte Basin	Blocks: 3	Sq km: 249	21/02/2007
<i>Bilbara, Montara, Padthaway, Tabbilk</i>				
Coogee Resources (Ashmore Cartier) Pty Ltd			50.00	
Coogee Resources (Ashmore Cartier) Pty Ltd*			50.00	
AC/RL4	Bonaparte Basin	Blocks: 1	Sq km: 83	31/03/2009
<i>Tenacious</i>				
Cosmo Oil Ashmore Ltd				
OMV (Timor Sea) Pty Ltd*				
AC/RL5	Bonaparte Basin	Blocks: 1	Sq km: 83	31/03/2009
<i>Tenacious</i>				
Cosmo Oil Ashmore Ltd				
Cosmo Oil Company Ltd				
OMV (Timor Sea) Pty Ltd*				

Joint Petroleum Development Area

Offshore				
Exploration Permit		Sq km approximate		
JPDA 03-01	Bonaparte Basin	Blocks: -	Sq km: 1,225	8/01/2022
<i>Jahal, Krill, Kuda Tasi</i>				
Impex Timor Sea Ltd			35.00	
Santos (ZOCA 91-01) Pty Ltd			25.00	
Woodside Petroleum (Timor Sea 1) Pty Ltd*			40.00	
JPDA 03-12	Bonaparte Basin	Blocks: -	Sq km: 1,470	6/02/2022
<i>Bayu/Undan, Elang, Flamingo, Kakatua</i>				
ConocoPhillips Petroleum (03-12) Pty Ltd*			46.71	
Emet Pty Ltd			1.58	
Impex Sahul Ltd			19.07	
Petroz (Timor Sea) Pty Ltd			13.37	
Santos (JPDA 91-12) Pty Ltd			19.27	
JPDA 03-13	Bonaparte Basin	Blocks: -	Sq km: 1,406	13/11/2026
<i>Bayu/Undan, Fohn</i>				
ConocoPhillips (03-13) Pty Ltd			13.13	
ConocoPhillips JPDA Pty Ltd*			37.50	
Eni JPDA 03-13 Ltd			26.87	
Tokyo Timor Sea Resources Pty Ltd			22.50	
JPDA 03-16	Bonaparte Basin	Blocks: -	Sq km: 2,684	13/11/2026
ConocoPhillips (03-16) Pty Ltd*			66.00	
NWE (ZOCA 96-16) Pty Ltd			14.00	
ZOCA 96-16 Pty Ltd			10.00	
ZOCA Pty Ltd			10.00	
JPDA 03-19	Bonaparte Basin	Blocks: -	Sq km: 2,262	13/11/2026
<i>Sunrise, Troubadour</i>				
ConocoPhillips (03-19) Pty Ltd			30.00	
OG ZOCA (95-19) Pty Ltd			10.00	
Shell Dev (PSC 19) P/L			32.33	
Woodside Petroleum (Timor Sea 19) Pty Ltd*			27.67	
JPDA 03-20	Bonaparte Basin	Blocks: -	Sq km: 3,216	13/11/2026
<i>Sunrise</i>				
ConocoPhillips Petroleum (03-20) Pty Ltd			30.00	
OG ZOCA (96-20) Pty Ltd			10.00	
Shell Development (03-20) Pty Ltd			33.33	
Woodside Petroleum (Timor Sea 20) Pty Ltd*			26.67	
JPDA 03-21	Bonaparte Basin	Blocks: -	Sq km: 3,072	25/03/2031
ConocoPhillips (03-21) Pty Ltd*			75.00	
Eni JPDA 03-21 BV			25.00	

Appendix L
2004

**Significant Australian offshore oil and gas
discoveries up to the end of 2004**

APPENDIX L: SIGNIFICANT AUSTRALIAN OFFSHORE OIL AND GAS DISCOVERIES UP TO THE END OF 2004

The listing of a 'discovery' in this Appendix is a reflection of company classification and should not be interpreted as a finalised Geoscience Australia classification. Current status is determined at the date of the last titles publication, usually in April.

CAPITALS denotes discoveries in production licences and abandoned producers;
Bold denotes discoveries in retention leases;
Italics denotes discoveries in vacant acreage and
 Lower case denotes other discoveries.

Discovery	Discovery operator	Discovered*	Produced**	Basin(s)	Type
BARRACOUTA	Esso	31-May-65	Mar-69	Gippsland	Oil and Gas
MARLIN	Esso	03-Feb-66	Nov-69	Gippsland	Oil and Gas
Bass	Esso	29-Mar-67		Bass	Gas
Pecten	Shell	03-Apr-67		Otway	Gas
KINGFISH	Esso	29-May-67	Apr-71	Gippsland	Oil
Golden Beach	Burmah	17-Jul-67		Gippsland	Gas
HALIBUT	Esso	29-Aug-67	Mar-70	Gippsland	Oil
DOLPHIN	Esso	21-Nov-67	Jan-90	Gippsland	Oil
PERCH	Esso	02-May-68	Jan-90	Gippsland	Oil
TUNA	Esso	07-May-68	May-79	Gippsland	Oil and Gas
FLOUNDER	Esso	28-Sep-68	Dec-84	Gippsland	Oil and Gas
LEGENDRE	Burmah	31-Oct-68	May-01	Carnarvon	Oil
SNAPPER	Esso	09-Dec-68	Jul-81	Gippsland	Oil and Gas
<i>Gage Roads</i>	WAPET	24-Jan-69		Perth	Oil
BREAM	Esso	16-Apr-69	Mar-88	Gippsland	Oil and Gas
MACKEREL	Esso	23-Apr-69	Dec-77	Gippsland	Oil
Flathead	Esso	26-May-69		Gippsland	Oil
Flinders Shoal	WAPET	09-Jul-69		Carnarvon	Oil and Gas
<i>Flat Top</i>	Aust Aquitaine	26-Jan-70		Bonaparte	Gas
Flag	WAPET	30-Jan-70		Carnarvon	Gas
Pelican (Esso)	Esso	24-Apr-70		Bass	Gas
Pepper	WAPET	03-May-70		Carnarvon	Gas
BATFISH	Esso	27-May-70	not producing	Gippsland	Gas
EMPEROR	Esso	29-Jun-70	not producing	Gippsland	Oil and Gas
Cormorant	Esso	27-Jul-70		Bass	Oil
Petrel	Arco	08-Nov-70		Bonaparte	Gas
Scott Reef	Burmah	26-May-71		Browse	Gas
NORTH RANKIN	Burmah	25-Jun-71	Jun-84	Carnarvon	Gas
North Rankin	Burmah	25-Jun-71	Jun-84	Carnarvon	Gas
Tern	Arco	04-Jul-71		Bonaparte	Gas
RANKIN	Burmah	23-Sep-71	Dec-01	Carnarvon	Oil and Gas
GOODWYN	Burmah	25-Nov-71	Feb-95	Carnarvon	Oil and Gas
Flamingo	Arco	30-Nov-71		Bonaparte	Gas
ANGEL	Burmah	11-Jan-72	not producing	Carnarvon	Gas
Puffin	Arco	08-Jun-72		Bonaparte	Oil
Penguin	Arco	23-Jul-72		Bonaparte	Gas

APPENDIX L (cont'd)

CAPITALS denotes discoveries in production licences and abandoned producers;
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 Lower case denotes other discoveries.

Discovery	Discovery operator	Discovered*	Produced**	Basin(s)	Type
Iago	WAPET	28-Jul-72		Carnarvon	Gas
Nannygai	Esso	31-Jul-72		Gippsland	Oil
Eider	Arco	16-Sep-72		Bonaparte	Gas
Poonboon	Esso	29-Sep-72		Bass	Gas
Eaglehawk	Woodside	13-Dec-72		Carnarvon	Oil
Swan	Arco	30-Jan-73		Bonaparte	Oil and Gas
Sole	Shell	05-Feb-73		Gippsland	Gas
West Tryal Rocks	WAPET	03-Mar-73		Carnarvon	Gas
Rosemary	Woodside	26-Mar-73		Carnarvon	Gas
Egret	Woodside	12-May-73		Carnarvon	Oil
<i>Lynedoch</i>	Shell	03-Jun-73		Bonaparte	Gas
DOCKRELL	Woodside	17-Aug-73	not producing	Carnarvon	Oil and Gas
LAMBERT	Woodside	23-Nov-73	Oct-97	Carnarvon	Oil and Gas
<i>Toolka</i>	Esso	05-Feb-74		Bass	Gas
Sunfish	Esso	01-Mar-74		Gippsland	Oil and Gas
Hampton	Woodside	17-Apr-74		Carnarvon	Gas
Aroo	Hematite	19-Apr-74		Bass	Gas
Heywood	Woodside	27-Jun-74		Browse	Gas
Sunrise	Woodside	15-Aug-74		Bonaparte	Gas
Troubadour	Woodside	15-Aug-74		Bonaparte	Gas
Troubadour	Woodside	15-Aug-74		Bonaparte	Gas
Sunrise	Woodside	15-Aug-74		Bonaparte	Gas
GRIFFIN	WAPET	19-Sep-74	Jan-94	Carnarvon	Oil
<i>Curlew</i>	Arco	13-Jan-75		Bonaparte	Oil and Gas
BLACKBACK	Esso	01-Sep-75	Jun-99	Gippsland	Oil
TIDEPOLE	Burmah	26-Nov-75	not producing	Carnarvon	Oil and Gas
Spar	WAPET	02-Sep-76		Carnarvon	Gas
Haycock	Woodside	07-Apr-77		Carnarvon	Gas
Caswell	Woodside	02-Jan-78		Browse	Oil and Gas
East Swan	Arco	19-Mar-78		Bonaparte	Gas
Koolinda	WAPET	02-Apr-78		Carnarvon	Gas
SEAHORSE	Esso	31-Aug-78	Sep-90	Gippsland	Oil and Gas
Zeewulf	Esso	03-May-79		Carnarvon	Gas
Jupiter (Phillips)	Phillips	14-Oct-79		Carnarvon	Gas
Resolution	Esso	08-Nov-79		Carnarvon	Gas
Brecknock	Woodside	13-Nov-79		Browse	Gas
Scarborough	Esso	13-Dec-79		Carnarvon	Gas
<i>Vinck</i>	Esso	16-Mar-80		Carnarvon	Gas
<i>Eendracht</i>	Esso	29-May-80		Carnarvon	Gas
Lesueur	Aust Aquitaine	22-Aug-80		Bonaparte	Oil and Gas

APPENDIX L (cont'd)

CAPITALS denotes discoveries in production licences and abandoned producers;
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Discovery	Discovery operator	Discovered*	Produced**	Basin(s)	Type
<i>Zeepaard</i>	Esso	16-Oct-80		Carnarvon	Gas
<i>Sirius (Esso)</i>	Esso	02-Dec-80		Carnarvon	Gas
Brewster	Woodside	08-Dec-80		Browse	Gas
Gorgon	WAPET	11-Jan-81		Carnarvon	Gas
Saturn	Phillips	28-Jan-81		Carnarvon	Gas
West Seahorse	Hubday	21-Oct-81		Gippsland	Oil
YELLOWTAIL	Esso	01-Nov-81	not producing	Gippsland	Oil
PATRICIA/BALEEN	Hubday	17-Nov-81	Apr-03	Gippsland	Gas
SPERM WHALE	Hubday	07-Jan-82	not producing	Gippsland	Oil and Gas
TARWHINE	Esso	20-Jan-82	May-90	Gippsland	Oil and Gas
Rosily	WAPET	03-May-82		Carnarvon	Gas
BOWERS	WAPET	14-Aug-82	not producing	Carnarvon	Gas
Novara	Esso	25-Oct-82		Carnarvon	Oil
WIRRAH	Esso	18-Nov-82	not producing	Gippsland	Oil and Gas
SOUTH PEPPER	Mesa	12-Dec-82	Jan-88***	Carnarvon	Oil and Gas
Wilcox	Woodside	17-Feb-83		Carnarvon	Gas
VOLADOR	Shell	24-Mar-83	not producing	Gippsland	Oil and Gas
WHITING	Esso	05-Apr-83	Oct-89	Gippsland	Oil and Gas
Emma	Occidental	02-May-83		Carnarvon	Oil
Basker	Shell	12-Jun-83		Gippsland	Oil and Gas
NORTH HERALD	Mesa	19-Jun-83	Dec-87***	Carnarvon	Oil
LUDERICK	Esso	23-Jun-83	not producing	Gippsland	Oil and Gas
CHERVIL	Mesa	02-Aug-83	Aug-89	Carnarvon	Oil and Gas
BAMBRA	Occidental	27-Aug-83	not producing	Carnarvon	Oil and Gas
JABIRU	BHP	29-Sep-83	Aug-86	Bonaparte	Oil
Bignose	Shell	30-Oct-83		Gippsland	Gas
South Chervil	Wesminco	20-Nov-83		Carnarvon	Oil and Gas
HARRIET	Occidental	22-Nov-83	Jan-86	Carnarvon	Oil and Gas
BASIL	Wesminco	23-Dec-83	not producing	Carnarvon	Oil and Gas
Turtle	Wesminco	10-Feb-84		Bonaparte	Oil
<i>Echuca Shoals</i>	Woodside	24-Feb-84		Browse	Gas
Manta	Shell	20-Mar-84		Gippsland	Oil and Gas
Veilfin	Esso	30-Mar-84		Gippsland	Gas
Dixon	Woodside	26-May-84		Carnarvon	Oil and Gas
Outtrim	Esso	02-Jul-84		Carnarvon	Oil
TALISMAN	Marathon	24-Aug-84	Jan-89***	Carnarvon	Oil
CHALLIS	BHP	23-Oct-84	Dec-89	Bonaparte	Oil
GRUNTER	Esso	11-Nov-84	not producing	Gippsland	Oil and Gas
Swift	BHP	10-Jan-85		Bonaparte	Oil
Barnett	Aust Aquitaine	06-Feb-85		Bonaparte	Oil

APPENDIX L (cont'd)

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Discovery	Discovery operator	Discovered*	Produced**	Basin(s)	Type
Montague	Woodside	07-Mar-85		Carnarvon	Gas
ELDER	Wesminco	29-May-85	not producing	Carnarvon	Gas
SALADIN	WAPET	19-Jun-85	Dec-89	Carnarvon	Oil and Gas
WHIPTAIL	Esso	09-Aug-85	not producing	Gippsland	Oil
YOLLA	Amoco	21-Aug-85	not producing	Bass	Oil and Gas
ANGELFISH	Esso	16-Dec-85	not producing	Gippsland	Oil and Gas
Skua	BHP	26-Dec-85	Dec-91***	Bonaparte	Oil and Gas
Leatherjacket	Esso	27-Feb-86		Gippsland	Oil
CAMPBELL	Bond	01-Mar-86	Jul-92	Carnarvon	Oil and Gas
ORPHEUS	Bond	20-Mar-86	not producing	Carnarvon	Gas
KIPPER	Esso	28-Mar-86	not producing	Gippsland	Oil and Gas
Kipper	Esso	28-Mar-86		Gippsland	Oil and Gas
Eclipse	BHP	03-Jul-86		Bonaparte	Oil and Gas
Avocet	Bond	27-Aug-86		Bonaparte	Gas
Forestier	Woodside	14-Sep-86		Carnarvon	Gas
Remora	Esso	21-May-87		Gippsland	Oil and Gas
ROSETTE	Bond	16-Oct-87	Apr-88	Carnarvon	Oil and Gas
Oliver	BHP	02-Feb-88		Bonaparte	Oil and Gas
Montara	BHP	26-Apr-88		Bonaparte	Oil and Gas
PENGANA	BHP	06-May-88	not producing	Bonaparte	Gas
CASSINI	BHP	18-Jul-88	Dec-89	Bonaparte	Oil
Evans Shoal	BHP	18-Aug-88		Bonaparte	Gas
Lorikeet	BHP	28-Aug-88		Bonaparte	Gas
Bilyara	BHP	13-Sep-88		Bonaparte	Oil and Gas
TORSK	Esso	10-Nov-88	not producing	Gippsland	Oil
<i>Kalyptea</i>	BHP	06-Feb-89		Browse	Gas
Mulloy	Esso	19-Feb-89		Gippsland	Oil
Angler	Petrofina	13-May-89		Gippsland	Gas
WANAEA	Woodside	26-May-89	Nov-95	Carnarvon	Oil
SWEETLIPS	Esso	18-Aug-89	not producing	Gippsland	Oil and Gas
Anemone	Petrofina	04-Sep-89		Gippsland	Gas
Rivoli	Minora	06-Sep-89		Carnarvon	Oil and Gas
Talbot	Santos	28-Nov-89		Bonaparte	Oil and Gas
COWLE	WAPET	22-Dec-89	Apr-91	Carnarvon	Oil and Gas
COSSACK	Woodside	06-Jan-90	Nov-95	Carnarvon	Oil
Keeling	Norcen	11-Jan-90		Bonaparte	Gas
Maple	BHP	11-Jan-90		Bonaparte	Gas
ROLLER	WAPET	19-Jan-90	Mar-94	Carnarvon	Oil and Gas
SINBAD	Hadson	25-Mar-90	Jul-92	Carnarvon	Gas
Archer	Petrofina	27-Mar-90		Gippsland	Oil and Gas

APPENDIX L (cont'd)

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Discovery	Discovery operator	Discovered*	Produced**	Basin(s)	Type
Gummy	Shell	02-Jun-90		Gippsland	Gas
Birch	BHP	01-Aug-90		Bonaparte	Oil
<i>Delamere</i>	BHP	20-Aug-90		Bonaparte	Gas
Venture	WAPET	25-Oct-90		Carnarvon	Oil
Tahbilk	BHP	01-Dec-90		Bonaparte	Gas
WANDOO	Ampol	15-Jun-91	Oct-93	Carnarvon	Oil
Leatherback	Lasmo	21-Jun-91		Carnarvon	Oil
TANAMI	Hadson	08-Jul-91	Oct-91	Carnarvon	Oil
Tanami	Hadson	08-Jul-91	Oct-91	Carnarvon	Oil
<i>Halcyon</i>	Lasmo	29-Jul-91		Bonaparte	Gas
SKATE	WAPET	18-Nov-91	Mar-94	Carnarvon	Oil and Gas
Skate	WAPET	18-Nov-91	Mar-94	Carnarvon	Oil and Gas
<i>Arquebus</i>	Amoco	27-Nov-91		Browse	Oil and Gas
Maret	Norcen	23-Jan-92		Bonaparte	Oil and Gas
MOONFISH	Esso	12-Jul-92	Jul-97	Gippsland	Oil and Gas
Maitland	Wesminco	09-Sep-92		Carnarvon	Gas
Fishburn	BHP	22-Oct-92		Bonaparte	Gas
Macedon/Pyrenees	BHP	31-Oct-92		Carnarvon	Oil and Gas
ULIDIA	Hadson	26-Nov-92	not producing	Carnarvon	Gas
<i>Troas</i>	BHP	06-Jan-93		Otway	Gas
La Bella	BHP	08-Feb-93		Otway	Gas
EAST SPAR	Wesminco	29-Mar-93	Oct-96	Carnarvon	Gas
<i>Marri</i>	Ampol	31-Mar-93		Perth	Gas
MINERVA	BHP	07-Apr-93	not producing	Otway	Gas
<i>Nebo</i>	Kufpec	14-May-93		Carnarvon	Oil
STAG	Hadson	18-Jun-93	May-98	Carnarvon	Oil
Australind	WAPET	19-Sep-93		Carnarvon	Oil and Gas
Lightfoot	WAPET	05-Oct-93		Carnarvon	Oil and Gas
Santa Cruz	Command	08-Nov-93		Carnarvon	Oil and Gas
<i>Rambler</i>	Sagasco	30-Dec-93		Bonaparte	Oil and Gas
Elang	BHP	10-Feb-94	Jul-98	Bonaparte	Oil
<i>Minotaur</i>	Marathon	14-Jul-94		Bonaparte	Oil
Fohn	Phillips	06-Aug-94		Bonaparte	Gas
ALKIMOS	Hadson	31-Aug-94	Sep-94***	Carnarvon	Oil and Gas
Saffron	Woodside	03-Oct-94		Carnarvon	Oil and Gas
LAMINARIA	Woodside	09-Oct-94	Nov-99	Bonaparte	Oil
Kakatua	BHP	08-Dec-94	Jul-98	Bonaparte	Oil
Chrysaor	WAPET	13-Dec-94		Carnarvon	Gas
Bayu/Undan	Phillips	03-Feb-95	Feb-04	Bonaparte	Oil and Gas
Cycad	Ampolex	25-Mar-95		Carnarvon	Oil and Gas

APPENDIX L (cont'd)

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Discovery	Discovery operator	Discovered*	Produced**	Basin(s)	Type
GUDGEON	Esso	27-Apr-95	not producing	Gippsland	Oil
Longtom	BHP	24-May-95		Gippsland	Gas
<i>Gwydion</i>	BHP	08-Jun-95		Browse	Oil
WONNICH	Ampolex	31-Jul-95	Jul-99	Carnarvon	Oil and Gas
<i>Ascalon</i>	Mobil	01-Sep-95		Bonaparte	Gas
Blencathra	BHP	18-Sep-95		Carnarvon	Oil
<i>Topaz</i>	Pan Pacific	29-Nov-95		Carnarvon	Gas
CORALLINA	Woodside	21-Dec-95	Nov-99	Bonaparte	Oil
ANTLER	Apache	23-Apr-96	not producing	Carnarvon	Oil and Gas
Elk	Apache	01-May-96		Carnarvon	Gas
Jahal	BHP	06-May-96		Bonaparte	Oil
AGINCOURT	Apache	09-Jun-96	Aug-97	Carnarvon	Oil
<i>Buffalo</i>	BHP	27-Sep-96	Dec-99***	Bonaparte	Oil
Lynx	Woodside	27-Sep-96		Carnarvon	Gas
Ridley	Apache	28-Sep-96		Carnarvon	Oil
Nimrod	BHP	10-Oct-96		Carnarvon	Gas
<i>Buller</i>	BHP	13-Dec-96		Bonaparte	Oil
Cornea	Shell	07-Jan-97		Browse	Oil and Gas
KEAST	Woodside	21-Jan-97	not producing	Carnarvon	Gas
Cherring	Mobil	09-Mar-97		Carnarvon	Gas
WOOLLYBUTT	Mobil	23-Apr-97	Apr-03	Carnarvon	Oil
MUTINEER	Santos	18-Jun-97	not producing	Carnarvon	Oil
Tenacious	Cultus	21-Jun-97		Bonaparte	Oil and Gas
Krill	BHP	19-Jul-97		Bonaparte	Oil
<i>Kelp Deep</i>	Mobil	29-Jul-97		Bonaparte	Gas
Reindeer	Apache	26-Oct-97		Carnarvon	Gas
<i>Psepotus</i>	Woodside	28-Feb-98		Browse	Gas
GIPSY	Apache	02-Mar-98	Feb-01	Carnarvon	Oil
Peck	Apache	18-Mar-98		Carnarvon	Oil
<i>Caspar</i>	BHP	21-Jun-98		Browse	Gas
White Ibis	Premier	23-Jun-98		Bass	Gas
ROSE	Apache	20-Jul-98	not producing	Carnarvon	Oil and Gas
<i>Bluff</i>	BHP	21-Jul-98		Bonaparte	Oil
Sparkle	Shell	23-Jul-98		Browse	Oil
Adele	Shell	09-Oct-98		Browse	Oil and Gas
John Brookes	Mobil	16-Oct-98	not producing	Carnarvon	Gas
JOHN BROOKES	Mobil	16-Oct-98	not producing	Carnarvon	Gas
<i>Chuditch</i>	Shell	02-Nov-98		Bonaparte	Gas
Vincent	Woodside	26-Dec-98		Carnarvon	Oil and Gas
Webley	Woodside	18-Jan-99		Carnarvon	Gas

APPENDIX L (cont'd)

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Discovery	Discovery operator	Discovered*	Produced**	Basin(s)	Type
LEE	Apache	25-Jan-99	not producing	Carnarvon	Gas
WINDSOR	Apache	07-Mar-99	not producing	Carnarvon	Gas
BENNET	Apache	12-Mar-99	not producing	Carnarvon	Oil
Sage	Apache	25-Mar-99		Carnarvon	Oil
ENFIELD	Woodside	05-Apr-99	not producing	Carnarvon	Oil and Gas
NORTH MARRA	Apache	08-Jul-99	not producing	Carnarvon	Oil and Gas
Geryon	WAPET	15-Sep-99		Carnarvon	Gas
Orthrus	WAPET	15-Oct-99		Carnarvon	Gas
NORTH GIPSY	Apache	28-Oct-99	Feb-01	Carnarvon	Oil
Cuttlefish	Amity	29-Oct-99		Gippsland	Oil and Gas
Cadell	Apache	08-Nov-99		Carnarvon	Gas
Nasutus	Apache	18-Nov-99		Carnarvon	Oil and Gas
Narvik	Apache	28-Nov-99		Carnarvon	Gas
MONTY	Apache	23-Dec-99	not producing	Carnarvon	Gas
COASTER	WAPET	30-Dec-99	not producing	Carnarvon	Oil
JOSEPHINE	Apache	11-Jan-00	not producing	Carnarvon	Gas
BAKER	Apache	20-Jan-00	not producing	Carnarvon	Gas
Urania	WAPET	11-Feb-00		Carnarvon	Gas
Scaffell	BHP	27-Feb-00		Carnarvon	Gas
Maenad	Chevron	28-Mar-00		Carnarvon	Gas
Corvus	Apache	07-Apr-00		Carnarvon	Gas
Padthaway	BHP	09-Apr-00		Bonaparte	Oil and Gas
Oryx	Apache	26-Apr-00		Carnarvon	Oil
Jansz	Mobil	27-Apr-00		Carnarvon	Gas
Crux	Nippon	03-May-00		Bonaparte	Gas
NORTH ALKIMOS	Apache	02-Jun-00	not producing	Carnarvon	Oil and Gas
Prometheus	Kerr-McGee	07-Jun-00		Bonaparte	Gas
LINDA	Apache	18-Aug-00	not producing	Carnarvon	Gas
Brecknock South	Woodside	18-Aug-00		Browse	Gas
Chamois	Apache	28-Aug-00		Carnarvon	Oil and Gas
Argus	BHP	14-Sep-00		Browse	Gas
Tusk	Apache	15-Sep-00		Carnarvon	Oil
Bandar	Tap	18-Oct-00		Carnarvon	Oil
Laverda	Woodside	27-Oct-00		Carnarvon	Oil and Gas
Phantom	Tap	01-Nov-00		Carnarvon	Gas
<i>Coleraine</i>	Phillips	21-Nov-00		Bonaparte	Oil
GAEA	Woodside	02-Dec-00	not producing	Carnarvon	Gas
Lindsay	Tap	06-Jan-01		Carnarvon	Oil and Gas
Audacious	OMV	31-Jan-01		Bonaparte	Oil
SIMPSON	Apache	07-Feb-01	Mar-01	Carnarvon	Oil

APPENDIX L (cont'd)

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Discovery	Discovery operator	Discovered*	Produced**	Basin(s)	Type
GIBSON	Apache	27-Feb-01	Feb-02	Carnarvon	Oil
SOUTH PLATO	Apache	27-Feb-01	Feb-03	Carnarvon	Oil
Kuda Tasi	Woodside	16-Mar-01		Bonaparte	Oil
THYLACINE	Origin	18-May-01	not producing	Otway	Gas
Corowa	Santos	07-Jun-01		Carnarvon	Oil
GEOGRAPHE	Woodside	16-Jun-01	not producing	Otway	Gas
EAST PILCHARD	Esso	02-Aug-01	not producing	Gippsland	Gas
Blacktip	Woodside	10-Aug-01		Bonaparte	Gas
Errol	Apache	02-Oct-01		Carnarvon	Gas
GUDRUN	Apache	08-Oct-01		Carnarvon	Oil
Cliff Head	Roc Oil	29-Dec-01		Perth	Oil
DOUBLE ISLAND	Apache	20-Jan-02	Feb-03	Carnarvon	Oil
PEDIRKA	Apache	24-Feb-02	Nov-02	Carnarvon	Oil
LITTLE SANDY	Apache	17-Mar-02	Nov-02	Carnarvon	Oil
VICTORIA	Apache	24-Mar-02	Nov-02	Carnarvon	Oil
HOOVER	Apache	03-Apr-02		Carnarvon	Oil
EXETER	Santos	14-Apr-02	not producing	Carnarvon	Oil
Cash	Coastal	23-Jul-02		Bonaparte	Oil
CASINO	Santos	14-Sep-02	not producing	Otway	Gas
ENDYMION	Apache	11-Oct-02	Nov-02	Carnarvon	Gas
SELENE	Apache	27-Oct-02	not producing	Carnarvon	Gas
Immortelle	Apache	02-Dec-02		Carnarvon	Oil and Gas
TAUNTON	Apache	08-Dec-02	not producing	Carnarvon	Oil and Gas
Scallop	Esso	23-Feb-03		Gippsland	Gas
Stybarrow	BHP Billiton	27-Feb-03		Carnarvon	Oil
Cyrano	Tap	23-Mar-03		Carnarvon	Oil and Gas
Crackling South	Tap	28-Mar-03		Carnarvon	Oil
Ravensworth	BHP Billiton	22-Jul-03		Carnarvon	Oil
GINGER	Apache	26-Aug-03	not producing	Carnarvon	Gas
Crosby	BHP Billiton	09-Oct-03		Carnarvon	Oil
Hurricane	Santos	05-Jan-04		Carnarvon	Gas
MONET	Apache	17-Apr-04		Carnarvon	Oil
Eskdale	BHP Billiton	06-May-04		Carnarvon	Oil and Gas
Stickle	BHP Billiton	15-May-04		Carnarvon	Oil
Harrison	BHP Billiton	26-May-04		Carnarvon	Oil
Wheatstone	ChevronTexaco	06-Aug-04		Carnarvon	Gas
Moby	Bass Strait	12-Oct-04		Gippsland	Gas
Martha	Santos	30-Oct-04		Otway	Gas
Trefoil	Origin	24-Nov-04		Bass	Gas
Altostratus	Strike Oil	03-Dec-04		Carnarvon	Oil

APPENDIX L (cont'd)

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Discovery	Discovery operator	Discovered*	Produced**	Basin(s)	Type
Katandra	OMV	26-Dec-04		Bonaparte	Oil

* Total depth date of discovery well

** Approximate, where available

*** Abandoned (Talisman 1992; North Herald, Skua, South Pepper 1997; Alkimos 1998; Buffalo 2005)

NOTES:

MARLIN includes Turrum and North Turrum

KINGFISH includes WEST KINGFISH (produced Dec-82)

HALIBUT includes COBIA (produced Jun-79) and FORTESCUE (produced Sep-83)

MACKEREL includes SOUTH MACKEREL

RANKIN includes ECHO/YODEL, Dockerell, Sculptor and Keast

GRIFFIN field was discovered by the Hilda 1A well, includes Ramillies

BLACKBACK field was discovered by the Hapuku 1 well

SALADIN includes YAMMADERRY

Macedon/Pyrenees field was discovered by the West Muiron 3 well

NORTH RANKIN includes PERSEUS, ATHENA, Capella, Perseus South and Searipple

Brewster includes Dinichthys, Gorgonichthys and Titanichthys

Appendix M 2004

Australian producing onshore oil and gas discoveries up to the end of 2004

APPENDIX M: AUSTRALIAN PRODUCING ONSHORE OIL AND GAS DISCOVERIES UP TO THE END OF 2004

The listing of a 'discovery' in this Appendix is a reflection of company classification and should not be interpreted as a finalised Geoscience Australia classification.

Discovery	Discovery operator	Discovered*	Produced**	Basin(s)	Type
Hospital Hill	Qld Government	17-Oct-1900	1900	Surat	Gas
Lakes Entrance	Lakes Entrance	01-Jul-1924	1930	Gippsland	Oil
Rough Range	WAPET	08-May-55	1955	Carnarvon	Oil
Timbury Hills	CSR	04-Apr-60	1961	Surat	Gas
Pickanjinie	AAO	12-Jul-60	1969	Bowen/Surat	Gas
Cabawin	Union Oil	26-Mar-61	1977	Bowen/Surat	Oil and Gas
Moonie	Union Oil	06-Dec-61	1964	Surat	Oil
Glentulloch	AAO	24-Dec-61	2001	Bowen	Gas
Westgrove	CSR	04-Jun-62	2002	Bowen	Gas
Sunnybank	AAO	01-Jan-63	1963	Bowen	Oil and Gas
Bony Creek	AAO	27-Mar-63	1969	Surat	Gas
Richmond	AAO	24-Aug-63	1969	Bowen/Surat	Oil and Gas
Myall Creek	Union Oil	20-Jan-64	2002	Bowen/Surat	Gas
Rolleston	Associated Freney	25-Jan-64	1990	Bowen	Gas
Gidgealpa	Delhi	10-Feb-64	1969	Cooper/Eromanga	Oil and Gas
Mereenie	Exoil	11-Feb-64	1984	Amadeus	Oil and Gas
Warooby South	AAO	27-Feb-64	1995	Surat	Gas
Blyth Creek	AAO	12-Mar-64	1993	Surat	Gas
Back Creek	Amalgamated Petroleum	24-Mar-64	1987	Bowen	Gas
Yardarino	WAPET	04-Jun-64	1978	Perth	Oil and Gas
Snake Creek	Amalgamated Petroleum	15-Jun-64	1969	Bowen	Oil and Gas
Duarran	AAO	02-Jul-64	1969	Surat	Oil and Gas
Beaufort	AAO	02-Jul-64	1984	Bowen/Surat	Gas
Alton	Union Oil	17-Jul-64	1966	Bowen/Surat	Oil
Yanalah	AAO	20-Jul-64	1970	Surat	Gas
Barrow Island	WAPET	04-Aug-64	1967	Carnarvon	Oil and Gas
Conloi	Union Oil	24-Aug-64	1966	Surat	Oil
Raslie	AAO	27-Sep-64	1969	Bowen/Surat	Gas
Gilmore	Phillips	24-Oct-64	1995	Adavale	Gas
Arcturus	Associated Freney	17-Nov-64	1990	Bowen	Gas
Merrimelia	Delhi	20-Nov-64	1983	Cooper	Oil and Gas
Lamen	CSR	28-Nov-64	1976	Surat	Gas
Pine Ridge	CSR	25-Jan-65	1965	Bowen/Surat	Gas
Oberina	Amalgamated Petroleum	04-Feb-65	1996	Surat	Gas
Trinidad	Amalgamated Petroleum	14-Feb-65	1965	Surat	Oil
Mount Horner	WAPET	22-Mar-65	1984	Perth	Oil
Anabranh	CSR	26-Mar-65	1965	Surat	Oil and Gas
Gingin	WAPET	31-Mar-65	1972	Perth	Gas
Hollyrood	CSR	08-Apr-65	1991	Surat	Gas
Major	Union Oil	20-Apr-65	1995	Bowen	Gas
Palm Valley	Magellan	01-May-65	1983	Amadeus	Gas
Maffra	CSR	14-Jun-65	1966	Surat	Oil and Gas
Bennett	Union Oil	18-Oct-65	1966	Surat	Oil

APPENDIX M (cont'd)

The listing of a 'discovery' in this Appendix is a reflection of company classification and should not be interpreted as a finalised Geoscience Australia classification.

Discovery	Discovery operator	Discovered*	Produced**	Basin(s)	Type
Nappacoongee	Delhi	06-Nov-65	2002	Cooper	Gas
Tarrawonga	Inter	07-Dec-65	1969	Bowen/Surat	Gas
Spencer	Delhi	30-Dec-65	1986	Eromanga	Oil
Leichhardt	Union Oil	22-Feb-66	1992	Surat	Oil and Gas
Moomba	Delhi	20-Apr-66	1969	Cooper/Eromanga	Oil
Lyndon Caves	CSR	28-May-66	1988	Surat	Gas
Dongara	WAPET	28-Jun-66	1971	Perth	Oil and Gas
Tubridgi	WAPET	08-Nov-66	1991	Carnarvon	Oil and Gas
Caroline	Alliance	29-Jan-67	1968	Otway	Gas
Pasco	WAPET	25-May-67	1972	Carnarvon	Oil and Gas
Wallumbilla South	CSR	12-Jun-67	1969	Bowen	Gas
Hope Creek	CSR	07-Oct-67	1971	Surat	Gas
Pringle Downs	CSR	15-Oct-67	1971	Bowen/Surat	Oil and Gas
Stakeyard	CSR	30-Nov-67	1995	Bowen	Gas
Daralingie	Delhi	10-Dec-67	1984	Cooper	Oil and Gas
Pleasant Hills	CSR	07-Nov-68	1969	Bowen/Surat	Gas
Mondarra	WAPET	25-Nov-68	1972	Perth	Gas
Grafton Range	CSR	22-Mar-69	1981	Surat	Gas
Toolachee	Delhi	22-Mar-69	1984	Cooper	Gas
Mooga	CSR	26-Jul-69	1976	Surat	Gas
Kincora	Union Oil	02-Dec-69	1977	Bowen/Surat	Oil and Gas
Boxleigh	Union Oil	03-Jun-70	1979	Bowen	Gas
Tirrawarra	Bridge	11-Jun-70	1983	Cooper	Oil and Gas
Packsaddle/Pondrinie	Alliance	12-Jun-70	1996	Cooper/Eromanga	Gas
Westlands	CSR	02-Aug-70	1993	Surat	Gas
Euthulla	CSR	10-Aug-70	1976	Bowen/Surat	Gas
Della	Pursuit	16-Aug-70	1971	Cooper/Eromanga	Gas
Noorindoo	Union Oil	09-Oct-70	1970	Bowen	Oil and Gas
Strzelecki	Pursuit	05-Dec-70	1982	Cooper/Eromanga	Oil and Gas
Mudrangie	Alliance	01-Jan-71	1985	Cooper	Gas
Moorari/Woolkina	Bridge	28-Feb-71	1983	Cooper/Eromanga	Oil and Gas
Walyearing	WAPET	10-Apr-71	1972	Perth	Gas
Coonatie	Flinders	05-Jul-71	1999	Cooper	Gas
Fly Lake	Delhi	15-Oct-71	1983	Cooper	Oil and Gas
Big Lake	Delhi	29-Dec-71	1972	Cooper/Eromanga	Oil and Gas
Epsilon	Delhi	03-Jan-72	1989	Cooper/Eromanga	Oil and Gas
Brumby	Delhi	06-Apr-72	1985	Cooper	Gas
Burke	Delhi	08-Aug-72	1982	Cooper	Gas
Dullingari	Delhi	06-Oct-72	1982	Cooper	Oil and Gas
Kanowana	Vamgas	08-Jan-73	1990	Cooper	Oil and Gas
Durham Downs	Delhi	01-Oct-73	1999	Cooper	Gas
Wolgolla	Delhi	01-Nov-73	2002	Cooper	Gas
Silver Springs/Renlim	Bridge	29-Jun-74	1978	Bowen	Gas
Karmona	Aust Aquitaine	01-Aug-76	1998	Cooper	Oil and Gas
Barrolka	Aust Aquitaine	05-Sep-76	2000	Cooper	Gas
Namur	Delhi	05-Nov-76	1979	Eromanga	Gas
Kidman	Delhi	15-Oct-77	1984	Cooper	Gas
Munkarie	Delhi	16-Feb-78	1985	Cooper	Gas
Mascotte	Jimbilly	17-May-78	1982	Surat	Gas
Wackett	Delhi	20-Aug-78	1998	Cooper/Eromanga	Gas

APPENDIX M (cont'd)

The listing of a 'discovery' in this Appendix is a reflection of company classification and should not be interpreted as a finalised Geoscience Australia classification.

Discovery	Discovery operator	Discovered*	Produced**	Basin(s)	Type
Boggo Creek	Bridge	02-Sep-78	1978	Bowen	Oil
Parknook	BHP	27-Dec-78	1994	Bowen	Gas
Warroon	BHP	31-Aug-79	1994	Bowen	Oil and Gas
Dullingari North	Delhi	23-Sep-79	1982	Cooper/Eromanga	Gas
Beldene	Hartogen	23-Oct-79	1982	Bowen/Surat	Gas
Thomby Creek	Bridge	13-Nov-79	1979	Bowen	Oil
North Paaratte	Beach	21-Nov-79	1986	Otway	Gas
Cuttapirrie	Santos	12-Apr-80	1985	Cooper/Eromanga	Oil and Gas
Woodada	Hughes and Hughes	12-Jun-80	1982	Perth	Gas
Glen Fosslyn	Bridge	09-Jul-80	1994	Bowen	Oil and Gas
Newstead	Hartogen	14-Dec-80	1983	Bowen/Surat	Gas
Marabooka	Delhi	30-Jan-81	1982	Cooper/Eromanga	Oil and Gas
Mudera	Delhi	07-Mar-81	1992	Cooper	Gas
Wallaby Creek	Beach	29-Mar-81	1996	Otway	Gas
Yapeni	Delhi	25-Apr-81	1984	Cooper	Gas
Kerna	Delhi	30-Apr-81	1993	Cooper	Gas
McKinlay	Delhi	26-May-81	1985	Eromanga	Oil
Blina	Home	08-Jun-81	1983	Canning	Oil
Wantana	Delhi	18-Jun-81	2002	Cooper	Gas
Royston	Hartogen	20-Jul-81	1982	Surat	Gas
Riverslea	BHP	24-Aug-81	1981	Surat	Oil
Namarah	Hematite	08-Oct-81	1994	Bowen	Gas
Dilchee	Delhi	28-Oct-81	1993	Cooper	Gas
Avondale	AAR	10-Nov-81	1984	Surat	Oil and Gas
Wanara	Delhi	19-Nov-81	1989	Cooper	Gas
Waggamba	Bridge	20-Nov-81	1982	Bowen	Gas
Jackson	Delhi	14-Dec-81	1983	Eromanga	Oil
Merivale	AAR	02-Jan-82	1990	Bowen	Gas
Yellowbank	AAR	12-Feb-82	1990	Bowen	Gas
Jackson South	Delhi	06-Apr-82	1984	Eromanga	Oil
Newington	Hartogen	06-Apr-82	1989	Bowen	Gas
Jack Lake	Delhi	14-Apr-82	1996	Cooper	Gas
Yellowbank Creek	Bridge	15-Apr-82	1982	Bowen	Oil
Borah Creek	Hartogen	28-Apr-82	1982	Bowen/Surat	Oil and Gas
Sandy Creek	Hartogen	27-May-82	1982	Bowen/Surat	Oil and Gas
Sirrah	Bridge	08-Jun-82	1985	Bowen	Gas
Waratah	Hartogen	15-Jun-82	1983	Bowen	Oil and Gas
Yapunyah	Hematite	01-Jul-82	1982	Bowen	Oil
Didgeridoo	Hartogen	13-Jul-82	1986	Surat	Gas
Punchbowl Gully	AAR	04-Aug-82	1992	Bowen	Gas
Cogoon River	Hartogen	16-Aug-82	1993	Surat	Gas
Andree/Leleptian	Delhi	23-Sep-82	1990	Cooper/Eromanga	Oil and Gas
Marana	Delhi	06-Oct-82	1987	Cooper	Gas
Sundown	Home	23-Nov-82	1983	Canning	Oil
Rakoona	Delhi	08-Dec-82	1988	Cooper	Gas
South Pepper	Mesa	12-Dec-82	1988	Carnarvon	Oil and Gas
Scotia	Oilmin	12-Jan-83	2002	Bowen	Gas
Springvale	CSR	23-Jan-83	1990	Bowen	Gas
Broadway	BHP	29-Apr-83	1992	Surat	Gas
North Herald	Mesa	19-Jun-83	1987	Carnarvon	Oil

APPENDIX M (cont'd)

The listing of a 'discovery' in this Appendix is a reflection of company classification and should not be interpreted as a finalised Geoscience Australia classification.

Discovery	Discovery operator	Discovered*	Produced**	Basin(s)	Type
Gunna	Delhi	29-Jul-83	1984	Eromanga	Oil
Chookoo	Delhi	30-Aug-83	1985	Eromanga	Oil and Gas
Narcoonowie	Delhi	21-Sep-83	1985	Eromanga	Oil
Nockatunga	Pancontinental	27-Sep-83	1984	Eromanga	Oil
Yambugle	Hartogen	11-Oct-83	1991	Bowen	Gas
Munkah	Delhi	27-Oct-83	1994	Cooper	Gas
Naccowlah South	Delhi	01-Nov-83	1984	Cooper/Eromanga	Oil and Gas
Wilson	Delhi	05-Nov-83	1984	Eromanga	Oil
Yarrabend	Hartogen	15-Nov-83	1985	Bowen/Surat	Gas
Tinpilla	Delhi	14-Dec-83	1984	Eromanga	Oil
Naccowlah West	Delhi	22-Dec-83	1984	Eromanga	Oil
Challum	Delhi	22-Dec-83	1985	Cooper/Eromanga	Oil and Gas
Sigma	Delhi	29-Dec-83	1985	Eromanga	Oil
Tintaburra	Hartogen	31-Dec-83	1984	Eromanga	Oil
Roswin	Bridge	07-Feb-84	1993	Bowen	Gas
Myrtleville	CSR	26-Feb-84	1990	Bowen	Gas
Yanda	Delhi	11-Mar-84	1985	Cooper/Eromanga	Oil and Gas
Springton	CSR	08-May-84	1990	Bowen	Gas
Moorooloo	CSR	23-Jun-84	1991	Bowen	Gas
Bogala	Delhi	27-Jun-84	1984	Cooper/Eromanga	Oil and Gas
Bodalla South	Lasmo	27-Jun-84	1984	Eromanga	Oil
Kerinna	Delhi	08-Jul-84	1985	Eromanga	Oil
Limestone Creek/Biala	Delhi	28-Jul-84	1985	Cooper/Eromanga	Oil
Talisman	Marathon	24-Aug-84	1989	Carnarvon	Oil
West Kora	Esso	27-Aug-84	1989	Canning	Oil
Naccowlah East	Delhi	28-Aug-84	1988	Cooper/Eromanga	Oil and Gas
Moolion	Delhi	19-Oct-84	2002	Cooper	Gas
Carbean	Hartogen	26-Oct-84	1985	Bowen/Surat	Gas
Berwick	Hartogen	11-Nov-84	1994	Bowen/Surat	Gas
Wancoocha	Delhi	17-Nov-84	1985	Cooper/Eromanga	Oil and Gas
Ballera	Delhi	27-Nov-84	1994	Cooper	Gas
Bookabourdie	Delhi	27-Nov-84	1985	Cooper/Eromanga	Oil and Gas
Baryulah	Delhi	05-Dec-84	2001	Cooper	Gas
Tickalara	Delhi	24-Dec-84	1985	Eromanga	Oil
Merrit	AAR	13-Jan-85	1988	Surat	Gas
Mayfield	AAR	25-Jan-85	1985	Surat	Gas
Ulandi	Delhi	03-Mar-85	1985	Cooper	Oil
Baratta	Delhi	09-Mar-85	1995	Cooper	Gas
Alwyn	Delhi	22-Mar-85	1985	Eromanga	Oil
Mooliampah	Delhi	07-Apr-85	1985	Eromanga	Oil
Muteroo	Delhi	21-Apr-85	1985	Eromanga	Oil
Lepena	Delhi	15-May-85	1987	Cooper	Gas
West Terrace	Home	28-May-85	1985	Canning	Oil
Kooroopa	Hartogen	01-Jun-85	1985	Eromanga	Oil
Watson South	Delhi	22-Jun-85	1985	Eromanga	Oil
Kenmore	Lasmo	26-Jun-85	1985	Eromanga	Oil
Jena	Delhi	04-Jul-85	1985	Cooper	Oil
Talgeberry	Hartogen	08-Jul-85	1985	Eromanga	Oil
Meranji	Delhi	12-Jul-85	1985	Cooper/Eromanga	Oil and Gas
Wippo	Delhi	31-Jul-85	2000	Cooper	Gas

APPENDIX M (cont'd)

The listing of a 'discovery' in this Appendix is a reflection of company classification and should not be interpreted as a finalised Geoscience Australia classification.

Discovery	Discovery operator	Discovered*	Produced**	Basin(s)	Type
Gooranie	Delhi	31-Jul-85	1987	Cooper	Gas
Koora	Pancontinental	01-Sep-85	1985	Eromanga	Oil
Washpool	Hartogen	07-Sep-85	1987	Bowen	Oil
Cook	Delhi	09-Sep-85	1985	Eromanga	Oil
Glenvale	Lasmo	16-Sep-85	1985	Eromanga	Oil
Fairymount	Sydney Oil	04-Oct-85	1985	Bowen	Oil
Nulla	Delhi	04-Oct-85	1999	Cooper	Gas
Louise	Bridge	13-Oct-85	1986	Bowen	Oil
Winna	Pancontinental	17-Oct-85	1985	Eromanga	Oil
Toobunyah	Hartogen	06-Nov-85	1985	Eromanga	Oil
Takyah	Hartogen	28-Nov-85	1986	Eromanga	Oil
McWhirter	Sunland	01-Dec-85	1985	Bowen	Oil
Watson	Delhi	15-Dec-85	1986	Eromanga	Oil
Skua	BHP	26-Dec-85	1991	Bonaparte	Oil and Gas
Deepwater	AAR	27-Dec-85	1988	Surat	Gas
Pira	Delhi	04-Jan-86	2000	Cooper	Gas
Ipundu	Hartogen	07-Jan-86	1986	Eromanga	Oil
Dirkala	Delhi	13-Feb-86	1986	Cooper/Eromanga	Oil and Gas
Garanjanie	Delhi	09-Mar-86	1990	Cooper	Gas
Black Stump	Lasmo	10-Mar-86	1986	Eromanga	Oil
Thungo	Pancontinental	15-Mar-86	1986	Cooper/Eromanga	Oil
Cowralli	Delhi	30-Mar-86	1997	Cooper	Gas
Kihee	Pancontinental	02-Apr-86	1986	Eromanga	Oil
Nanima	Delhi	13-Apr-86	1987	Eromanga	Gas
Taylor	Bridge	23-Apr-86	1988	Bowen	Oil and Gas
Nungeroo	Delhi	26-Apr-86	1986	Eromanga	Oil
Dilkera	Pancontinental	02-May-86	1989	Eromanga	Oil
Goyder	Delhi	16-May-86	1998	Cooper	Gas
Bimbaya	Santos	31-May-86	1988	Cooper	Gas
Narrows	Bridge	13-Jul-86	1986	Bowen	Oil
Okotoko	Delhi	04-Aug-86	1991	Cooper	Gas
Tennaperra	Delhi	08-Sep-86	1995	Eromanga	Oil
Tarwonga	Delhi	14-Oct-86	1991	Cooper	Gas
Merupa	Santos	03-Nov-86	1997	Cooper/Eromanga	Oil and Gas
Thurakinna	Delhi	04-Nov-86	1990	Cooper	Gas
Cooroo	Delhi	29-Nov-86	1987	Eromanga	Oil
Swan Lake	Santos	06-Dec-86	1997	Cooper	Gas
Mundi	Delhi	14-Dec-86	1991	Cooper	Gas
Cooroo North	Delhi	31-Dec-86	1987	Eromanga	Oil
Lake MacMillan	Delhi	14-Jan-87	2002	Cooper	Gas
Kurunda	Delhi	15-Jan-87	1989	Cooper	Gas
Toby	Delhi	31-Jan-87	1987	Cooper/Eromanga	Oil and Gas
Taylor South	Santos	10-Feb-87	1988	Cooper	Gas
Balcaminga	Santos	01-Apr-87	1999	Cooper	Gas
Maxwell	Pancontinental	06-Apr-87	1987	Eromanga	Oil
Wingnut	CSR	18-Apr-87	1988	Bowen/Surat	Gas
Caneon	CSR	06-May-87	1988	Surat	Gas
Dingera	Delhi	18-May-87	1988	Cooper/Eromanga	Oil and Gas
Mawson	Delhi	22-May-87	1987	Cooper/Eromanga	Oil and Gas
Keena	Delhi	20-Jun-87	1991	Cooper	Gas

APPENDIX M (cont'd)

The listing of a 'discovery' in this Appendix is a reflection of company classification and should not be interpreted as a finalised Geoscience Australia classification.

Discovery	Discovery operator	Discovered*	Produced**	Basin(s)	Type
Lloyd	Home	09-Jul-87	1987	Canning	Oil
Monler	Hartogen	15-Jul-87	1987	Eromanga	Oil
Waukatanna	Santos	18-Jul-87	1996	Cooper	Gas
Kanaloo	Hartogen	19-Jul-87	1987	Bowen/Surat	Gas
Deina	Santos	02-Aug-87	1988	Cooper	Gas
Kungarri	Hartogen	20-Aug-87	1989	Bowen	Gas
Pelican (Santos)	Santos	21-Sep-87	1989	Cooper	Oil
Cranstoun	Hartogen	02-Nov-87	1987	Eromanga	Oil
Karri	Delhi	05-Nov-87	1990	Cooper/Eromanga	Oil and Gas
Pintari North	Santos	08-Nov-87	1988	Eromanga	Oil
Judga	Delhi	26-Nov-87	1994	Cooper	Gas
Yuranigh	Hartogen	04-Dec-87	1989	Bowen	Gas
North Colgoon	Hartogen	20-Dec-87	1988	Surat	Gas
Katnook	Ultramar	31-Dec-87	1991	Otway	Gas
Pitchery	Delhi	21-Jan-88	1988	Eromanga	Oil
Walpanara	Hartogen	01-Feb-88	1991	Bowen	Gas
Munro	Delhi	01-Mar-88	1988	Cooper/Eromanga	Oil
Natan	Delhi	20-Mar-88	1988	Eromanga	Oil
Massy	Santos	11-Apr-88	2000	Cooper	Gas
Narie	Santos	09-May-88	1990	Cooper	Oil and Gas
Kujani	Santos	09-May-88	1991	Cooper	Gas
Taloola	Santos	30-May-88	1988	Eromanga	Oil
Tarbat	Hartogen	15-Jun-88	1988	Eromanga	Oil
Sturt	Santos	05-Jul-88	1988	Cooper/Eromanga	Oil and Gas
Varanus	Santos	06-Jul-88	1991	Cooper	Gas
Tantanna	Santos	23-Jul-88	1989	Eromanga	Oil
James	Santos	05-Sep-88	1989	Cooper	Oil
Kirralee	Santos	31-Oct-88	1991	Cooper	Gas
Arrakis	Santos	04-Nov-88	1992	Cooper/Eromanga	Gas
Beechwood	Bridge	09-Dec-88	1992	Bowen	Gas
Tinker	Bridge	30-Dec-88	1993	Bowen	Gas
Mettika	Santos	27-Jan-89	1990	Cooper	Gas
Spencer West	Santos	10-Apr-89	1989	Eromanga	Oil
Marsilea	Santos	04-May-89	1990	Cooper	Gas
Amyema	Santos	27-May-89	1990	Cooper	Gas
Naccowlah	Delhi	15-Jul-89	1989	Eromanga	Oil
Gidgee	Delhi	31-Jul-89	1989	Eromanga	Oil
Pinaroo	Delhi	24-Aug-89	1989	Eromanga	Oil
Muthero	Command	25-Aug-89	1989	Eromanga	Oil
Wandilo	Delhi	07-Sep-89	1989	Eromanga	Oil
Maxwell South	Command	15-Sep-89	1990	Eromanga	Oil
Corella	Delhi	22-Sep-89	1989	Eromanga	Oil
Ipundu North	Ampol	22-Sep-89	1989	Eromanga	Oil
Endeavour	Ampol	06-Oct-89	1989	Eromanga	Oil
Orientos	Delhi	18-Dec-89	1990	Eromanga	Oil
Bowen	Delhi	29-Dec-89	1990	Eromanga	Oil
Pogona	Santos	22-Feb-90	1996	Cooper	Gas
North Yardanogo	Barrack	02-Mar-90	1990	Perth	Oil
Caraka	Santos	14-Apr-90	1990	Cooper	Gas
Moolalla	Santos	14-Apr-90	1990	Cooper	Gas

APPENDIX M (cont'd)

The listing of a 'discovery' in this Appendix is a reflection of company classification and should not be interpreted as a finalised Geoscience Australia classification.

Discovery	Discovery operator	Discovered*	Produced**	Basin(s)	Type
Beharra Springs	Barrack	05-May-90	1990	Perth	Gas
Bottletree	OCA	06-Jul-90	1991	Bowen	Gas
Alisma	Santos	25-Jul-90	1994	Cooper	Gas
Malgoona	Santos	05-Aug-90	1990	Cooper	Oil and Gas
Boundary	Petroleum Securities	16-Aug-90	1990	Canning	Oil
Rheims	Delhi	19-Aug-90	1990	Eromanga	Oil
Beranga South	OCA	24-Aug-90	1991	Bowen	Gas
Cogoon River West	OCA	10-Oct-90	1991	Surat	Oil
Jarrar	Delhi	16-Dec-90	1990	Eromanga	Oil
Bolan	Delhi	04-Jan-91	1991	Eromanga	Oil
Cooba	Santos	26-Mar-91	1991	Cooper	Gas
Echuburra	Delhi	01-Apr-91	1991	Eromanga	Oil
North Boxleigh	Bridge	20-Apr-91	1993	Bowen	Gas
Cowan	Santos	19-May-91	1995	Cooper	Gas
East Glen	Bridge	23-May-91	1993	Bowen	Gas
Wallawanny North	Delhi	06-Jun-91	1991	Eromanga	Oil
Patroclus	Delhi	21-Jun-91	1991	Cooper/Eromanga	Oil and Gas
Cooloon South	Santos	01-Jul-91	1992	Cooper	Gas
Wilga	OCA	15-Sep-91	1992	Bowen	Oil and Gas
Keleary	Santos	13-Oct-91	1991	Cooper	Oil
Martini	OCA	22-Nov-91	1992	Bowen	Oil and Gas
Genoa	Delhi	03-Jan-92	1992	Eromanga	Oil
Boongala	Santos	14-Jan-92	1993	Cooper	Gas
Gimboola	Ampolex	10-Jul-92	1992	Eromanga	Oil
Roswin North	Bridge	20-Jul-92	1993	Bowen	Gas
Farina	Santos	14-Sep-92	1993	Cooper	Gas
Wirrarie	Santos	01-Nov-92	1995	Cooper	Gas
Coopers Creek	Santos	11-Nov-92	1992	Cooper	Gas
Turkey Creek	AGL	16-Nov-92	1993	Bowen	Gas
Genoa North	Santos	16-Dec-92	1993	Eromanga	Oil
Glenloth	OCA	16-Jan-93	1995	Bowen	Gas
Stokes	Santos	14-Jun-93	1997	Cooper	Gas
Lark	Bridge	16-Jun-93	1994	Bowen	Gas
Costa	Santos	05-Jul-93	1995	Cooper	Gas
Mudlalee	Santos	30-Jul-93	1993	Eromanga	Oil
Snake Creek East	Santos	02-Oct-93	1994	Bowen/Surat	Gas
Bargie	OCA	11-Jan-94	1994	Eromanga	Oil
Crest	WAPET	06-Feb-94	1994	Carnarvon	Oil
Link	Bridge	17-Mar-94	1995	Bowen	Gas
Haselgrove	Sagasco	27-May-94	2000	Otway	Gas
Inland	Inland Oil	25-Jun-94	1995	Eromanga	Oil
Mylor	Bridge	27-Jun-94	1999	Otway	Oil and Gas
Caladan	Santos	30-Jul-94	1994	Cooper/Eromanga	Gas
Iliad	Santos	10-Aug-94	1994	Eromanga	Oil
Alkimos	Hadson	31-Aug-94	1994	Carnarvon	Oil and Gas
Ballera West	Santos	01-Sep-94	1997	Cooper	Gas
Teloepa	Santos	13-Oct-94	1994	Cooper	Oil
Allambi	Santos	15-Oct-94	1995	Cooper	Gas
Caxton	OCA	24-Jan-95	1995	Bowen/Surat	Gas
Tarrawonga North	Santos	04-May-95	1995	Bowen/Surat	Gas

APPENDIX M (cont'd)

The listing of a 'discovery' in this Appendix is a reflection of company classification and should not be interpreted as a finalised Geoscience Australia classification.

Discovery	Discovery operator	Discovered*	Produced**	Basin(s)	Type
Tallerangie	Santos	25-May-95	2001	Cooper	Gas
Gahnia	Santos	03-Aug-95	1995	Cooper	Gas
Costa South	Santos	10-Aug-95	1996	Cooper	Gas
Kooroopa North	Santos	20-Sep-95	1996	Eromanga	Oil
Correa	Santos	06-Nov-95	1996	Cooper	Gas
New Royal	OCA	09-Nov-95	1995	Bowen	Oil and Gas
Pennie	Santos	01-Dec-95	1998	Cooper	Gas
Plantago	Santos	02-Dec-95	1998	Cooper	Gas
Yawa	Santos	21-Feb-96	1999	Cooper	Gas
Reg Sprigg	Santos	10-Jun-96	1996	Eromanga	Oil
Roti	Santos	03-Jul-96	2001	Cooper	Gas
Carmina	Santos	13-Sep-96	1996	Eromanga	Oil
Chiron	Santos	17-Sep-96	2001	Cooper	Oil and Gas
Bindah	Santos	10-Oct-96	2001	Cooper	Gas
Gudi	Santos	23-Oct-96	1998	Cooper	Gas
Stokes North	Santos	24-Oct-96	1999	Cooper	Gas
Beckler	Santos	30-Nov-96	1999	Cooper	Gas
Juno	Santos	09-Dec-96	2002	Cooper	Gas
Judga North	Santos	06-Jan-97	1997	Cooper	Gas
Merindal	Santos	16-Jan-97	1997	Cooper	Gas
Tarragon	Santos	16-Jan-97	1997	Eromanga	Oil
Nephrite	Santos	18-Jan-97	1997	Cooper	Gas
Koree South	Santos	06-Feb-97	1999	Cooper	Gas
Utopia	Oil Wells of Kentucky	24-Mar-97	1997	Eromanga	Oil
Weribone East	OCA	30-Mar-97	1998	Surat	Gas
Fenton Creek	Santos	04-Apr-97	1999	Otway	Gas
Riverside	OCA	13-Jun-97	1998	Surat	Gas
Nephrite South	Santos	19-Jun-97	1998	Cooper	Gas
Dorodillo	Santos	17-Jul-97	1997	Cooper	Gas
Hackett	Santos	18-Jul-97	2002	Cooper	Gas
Wippo South	Santos	01-Aug-97	2001	Cooper	Gas
Regatta	OCA	05-Aug-97	1998	Surat	Gas
Milluna	Santos	17-Aug-97	1998	Cooper	Gas
Costa Central	Santos	24-Oct-97	2001	Cooper	Gas
Cabernet	Santos	06-May-98	1998	Cooper	Gas
Digger	OCA	10-May-98	1998	Surat	Gas
Hera	Santos	30-Jun-98	2001	Cooper	Gas
Moolion North	Santos	05-Sep-98	1998	Cooper	Gas
Welcome Lake East	Santos	11-Sep-98	1999	Cooper	Gas
Verona	Santos	03-Nov-98	1999	Cooper	Gas
Moonanga	Santos	04-Nov-98	1999	Cooper	Gas
Yandina	OCA	14-Dec-98	2000	Bowen	Gas
Mica	Santos	17-Dec-98	1999	Cooper	Gas
Raven	Santos	11-Jan-99	1999	Cooper	Gas
Touriga	Santos	31-Jan-99	1999	Cooper	Gas
Windigo	Santos	30-Sep-99	2001	Cooper/Eromanga	Gas
Juno North	Santos	02-Dec-99	2001	Cooper	Gas
Wild Dog Road	Boral	22-Dec-99	2000	Otway	Gas
Penryn	Santos	19-Jan-00	2001	Otway	Gas
Tarrango	Santos	14-Jan-01	2001	Cooper/Eromanga	Gas

APPENDIX M (cont'd)

The listing of a 'discovery' in this Appendix is a reflection of company classification and should not be interpreted as a finalised Geoscience Australia classification.

Discovery	Discovery operator	Discovered*	Produced**	Basin(s)	Type
McIntee	Santos	22-Feb-01	2001	Otway	Gas
Tregony	Santos	15-Mar-01	2001	Otway	Gas
Moona	Santos	15-Mar-01	2001	Cooper/Eromanga	Gas
Quasar South	Santos	11-Apr-01	2002	Cooper/Eromanga	Gas
Croft	Santos	12-Apr-01	2002	Otway	Gas
Tellus	Santos	29-Apr-01	2001	Cooper/Eromanga	Gas
Naylor	Santos	17-May-01	2001	Otway	Gas
Wellington	Santos	18-Aug-01	2002	Cooper	Gas
Crowsnest	Santos	10-Oct-01	2002	Cooper/Eromanga	Gas
Hovea	Origin	13-Oct-01	2003	Perth	Oil
Quasar Southeast	Santos	12-Dec-01	2002	Cooper/Eromanga	Gas
Tellus South	Santos	11-Jan-02	2002	Cooper/Eromanga	Gas
Stokes Central	Santos	19-Feb-02	2002	Cooper/Eromanga	Gas
Acrus	Santos	11-May-02	2002	Cooper	Gas
Worrior	Stuart Petroleum	29-Sep-03	2004	Cooper	Gas

* Total depth date of discovery well

** Approximate, where available

